I. Introduction

This Transportation Plan for the Town of Black Mountain provides a vision for the future of transportation in the Town, and lays out specific strategies to provide mobility and access for all modes of transportation – driving, walking, bicycling, transit, wheelchair and others. It is established for the purposes of:

- Developing a local master plan for transportation that will feed into the MPO's Long Range Transportation Plan and Comprehensive Transportation Plan (replacing the regional "Thoroughfare Plan");
- Prioritizing needs that may be eligible for the MPO's priority needs list or TIP, as well as identifying other local priorities and categorizing them by possible funding sources (local CIP or maintenance, NCDOT funds, other);
- Mapping roadway connections, transit routes, pedestrian and bicycle facilities and trails to demonstrate connectivity and needs;
- Designating "gateway" areas or corridors and what their relationship to the transportation system should be;
- Integrating past and current planning efforts and demonstrating the connection between transportation goals and other current Town planning goals such as economic development and affordable housing.

This plan is designed to serve as a decision-making tool for Town leadership, including the Town Board of Alderman and the Planning Board, the Town staff, and other community advisory groups and committees. It provides specific recommendations for policies and strategies that improve the transportation system with consideration for Town goals for future residential, commercial and industrial growth. It maps existing conditions, hazardous areas, and improvement needs. It identifies projects for inclusion in the French Broad River Metropolitan Planning Organization's (FBRMPO) regional and long-term planning processes, and those that should be managed locally. Additionally, this plan integrates community inputs from a variety of meetings and advisory groups in an effort to coordinate transportation goals with other Town goals and objectives.

This Plan was prepared by French Broad River Metropolitan Planning Organization (FBRMPO) staff in cooperation with the Town of Black Mountain Planning Board, Economic Development Committee, and staff. An initial meeting and survey was conducted in September 2002. The project was then delayed for a period of time due to the transition of the MPO into a larger organization with additional local governments.

In the fall of 2003, FBRMPO staff met with Town staff to re-initiate the planning process. FBRMPO staff attended meetings of the Board of Aldermen, Economic Development Committee, and Greenways Commission in the fall and winter of 2003-2004, and a public workshop was held in conjunction with the Town Planning Board in January 2004.

The plan presents a number of transportation goals that were developed based on local input provided and a review of current planning initiatives. Objectives and strategies to achieve these goals have been developed in three key areas: streets and highways, transit and rail, and pedestrian and bicycle transportation and greenways. The plan also lays out recommendations and considerations for traffic calming and access management, as well as planning and zoning approaches because of community interest and potential projects in the future in those areas.

As the Town of Black Mountain works with the North Carolina Department of Transportation (NCDOT), the French Broad River Metropolitan Planning Organization (MPO), and local citizens, this plan will play an important role in articulating the transportation needs and priorities for the town.

II. Background

A. Transportation in the Town of Black Mountain

Known as "the front porch of Western North Carolina," Black Mountain sits in a valley in the mountains along the Swannanoa River and has long been a gateway to the region. It was originally known as "Grey Eagle" to the Cherokee and Catawba Native Americans who lived and hunted here in great numbers. In 1893, the Town was incorporated and re-named for the Black Mountain range that borders the Town to the north. At that time, the Town of Black Mountain had already become a major pathway for westbound immigrants, commercial trade, and the mountain railroad. This strategic location attracted industry, freight and trucking businesses, as well as residents and visitors who were drawn to its picturesque surroundings, trails, growing downtown, and easy access to transportation routes.

Except for the downtown area, the main thoroughfares and streets in and around Black Mountain were designed to carry automobile traffic with little consideration for pedestrians, bicycles, buses, or other users. The majority of them therefore have limited right-of-way, and many are circuitous and narrow – designed to the mountainous terrain. As the Town has urbanized, areas once considered rural are now experiencing levels of urbanization and traffic that are beyond what the roads were designed to handle. This has caused congestion on main thoroughfares and cut-through traffic on secondary and neighborhood roads.

The Local Roadway System

Black Mountain's roadway system consists of primary routes that are state roads with a connecting network of short Town streets, most of which are less than one mile in length. There are two arterials that intersect each other in the center of downtown. **US Highway 70** (or State Street) runs east to west from Ridgecrest to Swannanoa and Asheville (as a US Highway, its complete route runs from Atlantic Beach, NC to Globe, AZ). **NC Highway 9** runs north through downtown and is the primary route to the Town of Montreat and Montreat College. NC 9 continues south connecting to Blue Ridge Road (SR 2500), US64, NC74A and eventually US74.

NC Highway 9 to the south is one of 17 designated **Scenic Byways** in the Mountain Region (44 are designated throughout the State). Known as the "Black Mountain Rag", NC 9 winds its way to Bat Cave, Lake Lure, and Chimney Rock Park. This route, and the mountains that surround the Town, attract many visitors each year. (http://www.byways.org/browse/byways/12813/)

The **intersection of NC9 and US70** (State Street) in downtown Black Mountain is the central crossroads for traffic in, out, or anywhere through Town. NCDOT's Annual Average Daily traffic Counts for 2002 (NCDOT Statewide Planning Traffic Survey Unit), measured traffic at four points that feed into the intersection:

- 9000 AADT on Rt9 south of US 70 and north of railroad tracks,
- 11000 AADT on Rt9 north of US 70 in vicinity of Laurel Circle Drive,
- 8000 AADT on US70 east of Rt9 in vicinity of N. Ridgeway, and
- 10000 AADT on US70 west of NC 9 in vicinity of Church Street.

In addition to being the major crossroads that connect the two primary arterials, this intersection serves as a gateway to the downtown shopping district and as the main juncture for service and emergency vehicles coming from the Town Hall and Town Public Safety Building and Fire Department. This intersection also serves a significant amount of truck traffic daily, as businesses and industries in Black Mountain must follow US70 and/or Rt9 to access Interstate 40.

With the two primary arterials, most of the primary and secondary roads, and some of the smaller, local roads, under control of the State, the Town must communicate and work closely with NCDOT and its local **Division 13** staff on issues of maintenance and improvement needs.

State Roads in Black Mountain (from west to east)

Kearfot Rd (SR 2561)
Grovestone Road (SR 2472)
North Fork Rd. (SR 2474)
Tabernacle Rd. (SR 2471)
Cragmont Rd. (SR 2473)
Blue Ridge Rd – North Blue Ridge Rd. (SR2500)
Maney Lane (SR 2720)
Hightop Colony (SR 2717) to Last Resort (SR 2718)
Walker Cove Rd (SR 2479)
Hiawassee Ave (SR 2495)
Rhododendron Ave. (SR 2489)
Flat Creek Rd (SR 2615)
Avena Rd (SR 2522)
Rainbow Terrace (SR 2520)
McCoy Cove Rd (SR 2526)
Camp Branch Rd (SR 2712)
Lakey Gap Rd., from S. Blue Ridge Rd to NC9 (SR 2713)

Town of Black Mountain Street Map, July 2, 2002

Division 13 serves the seven counties of Buncombe, Haywood, Madison, Mitchell, Yancy, Burke, McDowell, and Rutherford, and is one of 14 local division offices throughout North Carolina that are responsible for construction, maintenance, roadside environmental programs, traffic services and the fiscal and facility

operations that support these functions. The Division 13 offices are located at 55 Orange Street, in Asheville, 28801, (828) 251-6171. The Division Engineer is responsible for managing this unit. A State Transportation Board member is appointed by the Governor to represent each Division at the State level. The Board member and Division Engineer may assist in directing State resources to local needs on state roads. The Town can also work through the Metropolitan Planning Organization (MPO) to address needs (see below).

On local streets, the Town is responsible for maintenance and other improvement needs, including any sidewalk construction. Town subdivision regulations encourage and lay out a process for new subdivisions such as Cotton Creek or private roads to be transferred to Town ownership and control.

The Town submits a **Powell Bill** map annually to the State, identifying local streets and their length, qualifying the Town for an annual allocation under the Powell Bill, or the "non-state system street-aid allocation." Powell Bill funds and Highway Trust Fund Supplement funds are distributed to assist municipalities in maintaining, constructing, reconstructing, repairing and improving streets (public thoroughfares), certain bikeways and sidewalks within their corporate limits (G. S. 136-41.1 through 41.3). Black Mountain's goal for Powell Bill funds are to, "provide and preserve the infrastructure of the Town by maintaining roads, streets, bridges, sidewalks, etc. in order to promote safe travel and conduct." Key actions for FY 03-04 are to replace the bridge on Dogwood Lane, install a culvert on Tenth Street to decrease flooding potential, and extend a culvert on Swannanoa Avenue. The Town will also review conditions of local streets and develop a systematic plan to resurface those deemed to be in the greatest need and to review sidewalk needs and develop a plan to replace, resurface, and construct sidewalks as necessary.

Interstate 40

Black Mountain straddles Interstate-40 which runs 2,547 miles from Wilmington, NC to Barstow, CA. There are two exits off of Interstate 40 within Black Mountain: Exit 65 serves westbound traffic only and ties into East State Street (US70) near Flat Creek Road; Exit 64 at NC9 serves both east and westbound traffic and is the primary entrance to Town. With growth in residential population, and an increasing commercial area around Exit 64, NC9 and its intersection with US70 (State Street) has experienced increased delays in traffic movement.

Several industries, businesses, and the Ingles Warehouse to the west of Exit 64 are utilizing this exit to access I-40 east, sending trucks along US70 through Town, compounding traffic delays in the already congested intersection of NC9 and US70. The next closest access to the interstate is at Exit 59 in Swannanoa, 5 miles to the west. NCDOT completed an initial Feasibility Study (No. FS-0013A) October 16, 2000, for an additional interchange at I-40 and Blue Ridge Road, and the State will be doing further studies on the project, looking at alternative designs, and may choose alternative locations if practical. The project is on the TIP Project list, but scheduled beyond the current TIP planning horizon of 2010.

Rail

The railway corridor through Town is controlled by the **Norfolk-Southern Railroad** and sees up to 22 trains in a 24-hour period, an increase of 2 trains per day since the Saluda Grade line was discontinued. This corridor parallels US 70 and when trains come through, traffic is delayed and backs up in the center of Town at the NC9-US70 intersection as well as at the three other at-grade crossings in town: Blue Ridge Road, Black Mountain Avenue, and Hemphill Road.

NCDOT completed the Western North Carolina Passenger Rail Study in March of 2001, recommending that this same corridor through Black Mountain accommodate **passenger rail** service twice daily, linking Amtrak service from Salisbury, NC to Asheville, NC. Nine communities were evaluated as potential stops for passenger rail service along the proposed line (from east to west) - Salisbury, Statesville, Hickory, Valdese, Morganton, Marion, Old Fort, Black Mountain, and Asheville – and the State is currently working with these communities to move the project forward.

This effort re-introduces a once critical and popular transportation mode for personal travel. The North Carolina Legislature chartered the Western North Carolina Railroad (WNCRR) in 1855, citing the need for passenger and freight services to the western part of the state. Work on the Salisbury to Asheville line was completed in 1879 and the first passenger rail service to Asheville began in October of 1880. In 1886 the railroad was leased and then sold to the Richmond and Danville Railroad, and in 1894, that railroad became part of the Southern Railway Company. Southern Railway linked with other rail services to connect the North Carolina Mountains to New York, Washington, Chicago, Charleston, and other major cities. This service was popular with those who fled cities to vacation in the mountains, feeding a boom in tourism for the area as well as the development of inns, resorts, and other service-oriented industries. Passenger train service to Asheville and Western North Carolina ended in 1975, but Asheville and Western North Carolina remained one of the most requested destinations for Amtrak.

Black Mountain and the NCDOT Public Transportation Division are studying a proposed location and design for a passenger rail station (TIP Project No. P-4011). NCDOT would like stations to include at a minimum, a 20-passenger waiting room, accessible restrooms, a 300-foot boarding platform, and 20-30 parking spaces. In addition, each station is recommended to incorporate community uses such transition areas to other transportation modes (taxis, bus), a visitors center, offices, restaurants or other community uses.

The Town has identified a refurbished building at the corner of Sutton Avenue and Black Mountain Avenue as well as an adjoining vacant lot to accommodate these needs as well as provide adequate parking and transit bus access. There is also community interest in exploring the development of a museum and visitors center to exhibit the history and information on the Town as part of the station facility.

Transit

Public transportation is an important component to the urban transportation system because it provides transportation choice, enhancing the mobility of its citizens. Existing land use and the mountainous topography place serious constraints on the transportation network. Roadways are not well connected and, in many cases, are constrained from being widened. Thus, it is necessary to rely more heavily on the transit system to overcome these obstacles in order to relieve congestion.

Public transportation's success is closely related to land use patterns and policies directing land use patterns. Nodal type development that incorporates a mix of land use will promote transit use along with the provision of transit stop amenities. Mixed-use and higher density commercial developments should be encouraged through land use policy and standards. Public transportation is a strategy to improve mobility and offer transportation options to the community and land use policy is an important component to the success of the service.

An opportunity before the Town is the development of a Black Mountain Campus for Montreat College. Students and faculty needing to travel between campuses could be a market for a fixed shuttle service or transit route. Such a service could benefit riders from the general public as well as those connected with the College.

Mountain Mobility transit services and **Asheville Transit's** intercity service provide transit connections within Black Mountain and to Asheville, Ridgecrest and Montreat. Mountain Mobility was established by Buncombe County in 1989 and was originally intended to serve the transportation needs of a few core human service agencies. However, the system has grown to serve a wide variety of organizations, as well as provide general public transportation services outside of the City of Asheville. Mountain Mobility operates 34 vans and two small buses providing about 500 passenger trips throughout the County on a typical weekday, and is administered through Buncombe County Planning and Development's Transportation Division. Asheville Transit Services extended service to Warren Wilson College in Swannanoa and to the Town of Black Mountain in the past year in order to meet the growing requests for intercity service linking those areas to the City of Asheville. The intercity bus runs 5 trips per day between the Asheville Transit Center, along US70, to the Black Mountain Depot.

Transit service has been well received in the Black Mountain community, and has seen a steady increase in ridership in its short history. One comment from the planning process was that Mountain Mobility should improve coordination and timing of their services to better connect with the Asheville Transit Bus, providing more coverage and less waiting for transfer from one service to the other. Another comment was a request for better bus stop amenities, such as benches or shelters, and route information. A transit center, which is being considered as part of the new passenger rail station plan, will help to improve transit service transfers and coordination. Transit funding and programming is coordinated locally through the service providers who submit requests though the MPO for Federal and State transit funding as part of Priority Needs List and TIP development.

Pedestrian and Bicycle Access

In the 1990's, the community initiated several planning efforts to improve bicycle and pedestrian access in and around Black Mountain. The "Sports Loop Plan" created in 1998 proposed a strategic combination of greenway trails and new sidewalk to connect the Town's Parks, Lake Tomahawk and the downtown. The Town implemented the Sports Loop Plan within 5 years utilizing a variety of funds – local and State – to create an effective, though limited, network.

The Town **Greenway Master Plan** was prepared by the Town's Greenways, Walkability, and Biking Task Force and endorsed by the Board of Alderman in 2002. It identified an expanded network of transportation and recreational corridors for pedestrians, bicyclists, and other non-motorized modes of transportation. The purpose of the plan is to develop a series of off-road paths and trails that connect to sidewalks, creating a seamless and user-friendly transportation network. The Town has completed several sections of its planned greenway network: The Tomahawk Lake path (0.55 miles in length); the "In-the-Oaks" Trail (0.6 miles); and the "Black Mountain Park path (0.7 miles). The Plan lays out 9 additional sections of greenway that when built will provide an estimated 10.3 miles of infrastructure for pedestrians, bicyclists, and other users. While costs have not been estimated for each of the proposed sections, a safe estimate for a 10 foot-wide asphalt trail would be in the range of $100 - $120 per linear foot, depending on terrain and not including land acquisition costs.

> "The business community supports a greenway system. Many parents relish the idea that their children could walk or ride their bikes safely to school, to the pool, or to the downtown area. Tourists would love to be able to hike or bike from downtown to Mount Mitchell, to Catawba Falls, or connect to the hundreds of miles of trails available in the nearby Pisgah National Forest or Blue Ridge Parkway. We have an opportunity to provide sustainable growth, alternate transportation, and friendly, enjoyable recreational amenities for our residents, our visitors, and our town."
>
> - Town of Black Mountain Greenway Master Plan, August 2002

On the **Bicycle Transportation Map** for Asheville and Buncombe County (April, 1998), and as part of the MPO Bicycle and Pedestrian Thoroughfare Plan, Black Mountain ranks as one of the more bicycle and pedestrian friendly communities in the County. Streets rated for the Bike Map are all either "Level 1" for "little traffic and suitable for those with basic bicycling skills," or "Level 2," for "moderate levels of traffic with possibly high volumes during certain periods." However, with continued growth in population and traffic volume, these once bicycle and pedestrian friendly streets are becoming more dangerous. Community efforts to increase sidewalk infrastructure and construct Greenways, are effective and timely ways to meet the growing demand for more and safer bicycle and pedestrian options.

Pedestrian concerns are of particular importance in urban and downtown areas. While vehicular fatalities tend toward rural streets due to their high-speed nature, 70% of pedestrians killed are in cities. This is important because everyone is a pedestrian some of the time. A 1996 report by the Federal Transit Administration found that many others would walk more if better facilities existed, and that nearly 1/3 of the American population is transportation disadvantaged. This includes the 56 million children are under the driving age, 32 million senior citizens are seeing their driving ability diminish, and 24 million people with disabilities depend on transit, paratransit, or expensive private transportation services. Safe crossings are the most challenging aspect of developing a safe pedestrian environment. The main risk factors are:

1. Exposure – duration during which the pedestrian is exposed to traffic
2. Vehicle Speed – affects reaction distance, stopping distance, and severity of injury
3. Visibility of Pedestrian – drivers must be able to see pedestrian to avoid them

Pedestrian safety throughout the downtown area in Black Mountain and along **NC9 and US70** is a long-standing concern and the Town is currently seeking ways to address those needs. As a tourism and retirement destination, Black Mountain has a significant number of people who walk, especially in the downtown shopping district. A recent incident in January of 2004, in which a vehicle drove up on the sidewalk downtown, heightened concerns for pedestrian safety and streetscape design. Increased residential development in the west side of town, in neighborhoods abutting US70, has resulted in increasing requests to The Board of Alderman for a sidewalk along US70, linking those areas to downtown. An apartment complex that has several wheelchair-dependent residents and that is located near US70 and Blue Ridge Road, has raised ADA concerns for access along US70 and into downtown.

Asheville Regional Airport

A traveler from Black Mountain can reach the Asheville Regional Airport in about 30 minutes by vehicle, utilizing I-40 and I-26. The Regional Airport is seeing its services and usage expand. Total passenger traffic at the Airport was up 12 percent in the fourth quarter of 2003 versus fourth quarter 2002. At 126,017 passengers, the total marks the highest fourth quarter totals since 2000. The airport has enjoyed three consecutive months of positive year-to-year passenger growth, a pace not seen since early 1999. Daily service to New York and Atlanta will continue to draw passengers, linking Asheville to major national and international transportation centers. So, while the Airport does not directly play a role in the local transportation system of Black Mountain, its proximity to the community provides options for local business, travel, and shipping interests.

B. Black Mountain's Participation in the Metropolitan Planning Organization and NCDOT Transportation Planning

The Town of Black Mountain is a member of the **French Broad River Metropolitan Planning Organization** (FBRMPO). FBRMPO is the transportation planning agency serving the urbanized areas of Buncombe County, Haywood County, and Henderson County, North Carolina. This organization, formerly known as the Asheville Area MPO, expanded to 18 local governments in 2003 as a result of the 2000 Census. Through its participation in FBRMPO, the Town is able to ensure that its transportation needs and goals are considered as part of Federal, State and Regional transportation planning processes.

The MPO is a transportation policy-making organization made up of representatives from local government and transportation authorities and is part of a federal process to conduct transportation planning in urbanized areas. Its purpose is to ensure that existing and future expenditures for transportation projects and programs are based on a *comprehensive*, *cooperative*, and *continuing* planning process. FBRMPO is charged with developing long-range transportation plans and priorities for all modes of transportation improvements, including highways, public transit, and bicycle and pedestrian facilities. Every two years the MPO develops a **Priority Needs List** for transportation improvements. The Priority Needs List outlines transportation needs in several categories including roadway improvements, pedestrian and bicycle projects, and public transit.

Black Mountain Projects on the Priority Needs List (adopted by the TAC, December 11, 2003), with the two requests that have made it to the TIP listed first:

- *I-40 at Blue Ridge Road Interchange* (Interstate Project on TIP No. I-4409 – not funded). Request to move this project from the unfunded category to the funded category in the State TIP to allow for further planning. This project could potentially improve pedestrian, bicycle and vehicular safety in downtown Black Mountain as currently all eastbound tractor-trailer traffic from the manufacturing concerns along US70 must pass through the narrow and congested streets of downtown in order to access Interstate 40 East. It also will have economic development impacts, encouraging new investment along US70.
- *Black Mountain Rail Station – Station Construction* (Passenger Rail Project on TIP No. P-4011 – funded for planning only). Proposal to construct a multi-modal transportation center in the downtown area. Current plans are for the construction of a 2,000 square foot station to be built on property currently owned by the Town next to the Norfolk Southern railroad tracks between NC9 and Black Mountain Avenue. While the original idea to develop a multi-modal center came from the proposed return of passenger rail service to Western North Carolina, the recent phenomenal success of the inter-city bus route between Black Mountain and Asheville also brought forward this need. Following

on the heels of the inter-city route, a local feeder system was developed by Mountain Mobility that shuttles area residents to downtown to catch the inter-city bus. In addition, cab service has recently returned to Black Mountain that could utilize the center. The proposed multi-modal center will be designed to accommodate pedestrian, bicycle, and wheelchair-dependent public as well as other modes of transportation to serve as a hub for the distribution of people throughout the community.

- *NC 9/Montreat Road Pedestrian facilities* (not scheduled on TIP – not funded). Long-standing request on PNL to install sidewalks along NC 9 from Third Street in Black Mountain to the Montreat gate. This segment is a persistent problem because of the narrowness of the roadway and heavy pedestrian traffic, including tourists that may be unfamiliar with the danger involved. At least one fatality has occurred on this segment.

- *US70 Pedestrian facilities* (not scheduled on TIP – not funded). Request to install a sidewalk on State Street (US70) from Cragmont Road west to Blue Ridge Road. This segment of highway is heavily traveled by pedestrian traffic to/from the center of Town and residential areas adjoining US70. Sidewalks already exist from the center of downtown to Cragmont Road, but beyond that point, pedestrian or wheelchair traffic must walk in the paved portion of the right-of-way. The extension of sidewalk to Blue Ridge Road would assist in the safe travel of pedestrians and a significant wheelchair-dependent population that resides in an apartment complex on Blue Ridge Road. The Town has allocated some local funds toward this project.

- *Bicycle Safe Grates on Multiple Routes* (not scheduled in TIP – not funded). This requests replacement of unsafe drainage grates on primary bicycle routes throughout the FBRMPO area.

- *Black Mountain Phase IV – Primary School Greenway Trail* (not scheduled in TIP – not funded). One of nine phases of the Town's adopted Greenway Master Plan, this request links Phase III (Park Connector), State Street (US70), and the Primary School to the proposed Flat Creek Trail, the Town of Montreat and a trail system that connects to Mount Mitchell.

- *Black Mountain Phase V – Flat Creek Trail* (not scheduled in TIP – not funded). See above.

- *Feasibility Study for a New Route: Black Mountain Southeast Connector* (not scheduled in TIP – not funded). Initiate a feasibility study for a route on a new alignment to connect US Highway 70 East with NC 9 in the vicinity of the I-40 interchange and the new Bi-Lo Shopping Center. This project will provide an important alternative route that will divert a portion of the ever-increasing amount of vehicular traffic away from the intersection of NC9 and US70. Is also would provide an important, unfettered access for public safety vehicles and other traffic across a major rail corridor that has recently seen an increasing number of trains as a result of the closing of the Saluda Grade.

Other MPO and Statewide Transportation Planning Activities

The Priority Needs List is submitted to the State for consideration in the **State Transportation Improvement Program or TIP**. This document contains funding information and schedules for transportation improvements in North Carolina and is organized by category: highways, aviation, enhancements, public transportation, rail, bicycle and pedestrian. The projects are listed for a seven-year planning period, but the STIP itself is updated every 2 years. The 2004-2010 TIP is now in effect, and the State and MPO are in the process of drafting the 2006-2012 TIP.

To ensure that MPO planning activities are "comprehensive, cooperative, and continuing," MPOs are required to produce a **Long Range Transportation Plan**. The LRTP is a document that presents a 25-year plan for transportation improvements in the area. It is updated every 5 years and will be updated again during 2004 for submittal in 2005.

In MPOs such as the French Broad River MPO where the planning area serves a population of over 200,000 people, a **Congestion Management System (or "CMS")** is also required to provide continuous and long-term monitoring of transportation system delays and to provide strategies for alleviating congestion. The intersection of NC9 and US70/State Street is an identified area of concern in our area's CMS. The proposed interchange of I-40 and Blue Ridge Road will address truck and freight traffic through the intersection thereby reducing traffic delays in the center of Town, and the Southeast Connector project will divert through traffic to the east side of town, away from this intersection, making both projects viable CMS strategies. This designation within the CMS will hopefully elevate these projects' priority in the Statewide Planning process.

The MPO is made up of two primary committees. The policy-making committee is the **Transportation Advisory Committee or "TAC"** and is made up of elected officials appointed by the participating governments. Mayor Michael Begley represents the Town on the TAC. The **Technical Coordinating Committee or "TCC"** consists of technical staff from local jurisdictions, transit services, and the NCDOT. Town Manager Tony Caudle represents the Town on the TCC. The TAC and TCC form and utilize sub-committees, citizen committees, and work groups for various projects and direct staff through a "Planning Work Program" to undertake planning tasks and ensure community participation, including special studies or projects such as this local plan for Black Mountain.

A new program being implemented by the NCDOT is **North Carolina Moving Ahead! (NCMA)**. The NCMA program is investing $700 million from the State Highways Fund into maintenance and modernization of existing state roads and public transportation. Black Mountain requested that several State Roads within their jurisdiction be considered for the program, but none were chosen. If another call for requests is made by the State, the Town could again look for opportunities for improving its existing transportation system through these funds.

(Insert list of requested projects?)

C. Local and Regional Considerations

The Black Mountain Comprehensive Plan

The Town is finalizing recommendations and actions identified in a new Comprehensive Plan. The Plan provides excellent demographic data and illustrates growth and economic trends. The Comprehensive Plan also outlines multiple Vision Statements for how the Town could be in 2020, and various recommendations for action items for implementation. This Local Transportation Plan is written to complement that community effort, focusing on how possible actions in transportation improvements can re-enforce the vision presented in that document. Several specific concerns related to transportation were identified in that process:

- Re-evaluation of speed limits and traffic signage throughout Town;
- Improve traffic control and traffic calming downtown;
- Build Healthy/Walkable Sidewalks Throughout the Community;
- Complete the Montreat Road Sidewalk; and
- Share Roadways with Bikeways.

Growth, Land Use, and the Housing Study

Like all Towns in Buncombe County, Black Mountain has seen a significant growth in population between the 1990 and 2000 Census. While Buncombe County saw an overall growth of 18.1%, however, the Town of Black Mountain grew by over 38%.

Town of Black Mountain	**1990 Census**	**% of total pop 1990**	**2000 Census**	**% of total pop 2000**	**% change**
Population:	5,418	100	7,511	100	38.6
62 years and over:	1,533	28	1,876	25	22.4
14 years and under:	920	17	1,157	15.4	25.8
15 through 61 years:	2,965	54.7	4,478	59.6	51

In addition to year-round residents, Black Mountain sees traffic impacts from tourists, seasonal residents, and college students. Montreat and Black Mountain both see a rise in tourists and traffic in the summer and fall months from summer camps, programs at the several retreats and conference centers that are in the area, and those who have second homes. Montreat College in Montreat has an enrollment of over 400 students, and Warren Wilson College to the west in Swannanoa has an enrollment of over 750 students.

Because of the Town's location in a mountain valley, there is not much developable space left to accommodate the growth that the Town is experiencing. Several areas are being developed or being considered for development that will require or impact transportation improvements, include:

- *West Black Mountain along US70.* US70 west of downtown, is seeing increased residential development in neighborhoods to the north. An apartment complex off of Blue Ridge Road is generating wheelchair traffic along the highway corridor. It is also home to major industries for the region, including the Corporate Headquarters for Ingles Markets, Inc. There are significant amounts of available retail space in several commercial centers that could be revitalized.

- *Montreat College Black Mountain Campus at the "Inn the Oaks" property.* The US70 corridor adjoins a large property being purchased by Montreat College in order to create an expansion campus. The campus will generate significant pedestrian and automobile traffic along US70 as well as Vance Avenue.

- *Properties south of State Street and east of NC9*. This area holds the last large undeveloped tracts of land in central Black Mountain, but there is little to no access from these to the road network. The proposed connector from NC9 to East State Street would provide a needed release valve for congestion at the NC9/US70 intersection and open this area to potential development.

- *NC9 Blue Ridge Road south of I-40*. The commercial center south of I-40, off of NC9 has an Annual Average Daily Traffic count of 12,000. Blue Ridge Road loops southwest to tie-in to US70. The proposed interchange at Blue Ridge Road and I-40 could impact local residential areas and businesses and the entrance to a Park. As this proposal moves forward through the Statewide Planning process, the Town will have opportunities to work with the State on Preliminary design and local concerns. The Planning Board may also consider this area to balance growth, commercial development and existing residential neighborhoods as part of the Town's future Zoning revision process.

Housing costs have become increasingly competitive. A recent "Assessment of Housing Needs in Black Mountain," prepared by Housing and Community Insight, 2002, found that home prices increased approximately three times faster than household incomes during the past decade or so. While median household income rose by 37.9 percent from 1989 to 1999, median home prices rose 122 percent from 1992 to 2001. The study recommends that the Town encourage "in-fill" development on under-utilized lots for commercial, residential, and mixed uses, and denser development, such as apartments, condominiums, or clustered single-family housing to accommodate the growing population and keep the housing market open for more moderately priced housing. As development continues, Town streets will see increasing traffic on its existing roadway system. New residential and commercial projects that include utilitarian pedestrian connections and "transit oriented" designs can create transportation options for residents that have less of an impact on Town roads and that are more affordable.

Commuter Patterns

The Housing Study also showed that **more than two-thirds (68%) of Black Mountain workers commute**. Of those, 41 percent work in the City of Asheville, and 45 percent work elsewhere in Buncombe or Madison counties. Another 350 Black Mountain residents commute to jobs outside of the Buncombe/Madison area. Interstate 40 carries most commuters west to jobs in Buncombe. This marks an increase in commuting from 1990 levels when 59% of workers commuted to jobs outside of Town. Notably, in the past three years several major employers within the Town limits have closed or down-sized. This may lead to increased commuting by Town residents, and there is community support for increased bus service. Other transportation demand management strategies such as ride-sharing and commuter lots are being considered as part of the FBRMPO CMS Strategy.

Smart Growth and Transportation

The concepts of in-fill, high-density, and mixed-use development with transportation choices that were recommended in the Housing Study and the Vision statements that were developed in the Comprehensive Plan, are all consistent with "Smart Growth" principles of planning. There are ten "Smart Growth Principles" as outlined and described by the Smart Growth Network (www.smartgrowth.org), most of which involve consideration for transportation planning issues:

1. *Create a range of housing opportunities and choices.*
   Housing constitutes a significant share of new construction and development. More importantly, it can determine access to transportation, commuting patterns, access to services and education, and consumption of energy and other natural resources. By creating a wider range of housing choices, communities mitigate the environmental costs of auto-dependent development, use their infrastructure resources more efficiently, ensure a better jobs-housing balance, and generate support for transit stops, commercial centers, and other services.

2. *Create Walkable neighborhoods.*
   Walkable communities are desirable places to live, work, learn, worship and play. Their desirability comes from two factors. First, walkable communities locate within an easy and safe walk, goods (such as housing, offices, and retail) and services (such as transportation, schools, libraries) that a community resident or employee needs on a regular basis. Second, walkable communities make pedestrian activity possible, thus expanding transportation options, and creating a streetscape that better serves a range of users -- pedestrians, bicyclists, wheelchairs, transit riders, and automobiles. To foster walkability, communities must mix land uses and build compactly, and ensure safe and inviting pedestrian corridors.

3. *Encourage community and stakeholder collaboration*
   Planning should respond to a community's own sense of how and where it wants to grow. Those that see dis-investment may emphasize infill development; those with separated uses may be looking for the sense of place provided by mixed-use town centers; and those with poor air quality may seek relief with transportation choices. The needs of the community and the programs to address them are best defined by the people who live and work there.

4. *Foster distinctive, attractive places with a strong sense of place*

   Communities should set standards for development and construction that respond to community values of architectural beauty and distinctiveness, as well as expanded choices in housing and transportation. Create interesting, unique communities that reflect the values and cultures of the people who reside there, and foster the types of physical environments, which support a more cohesive community fabric.

5. *Make development decisions predictable, fair and cost-effective*

   State and local governments must make an effort to make development decisions about smart growth more timely, cost-effective, and predictable for developers.

6. *Mix Land Uses*

   If uses are in close proximity to one another, alternatives to driving, such as walking or biking, become viable. Mixed land uses provide a more diverse and sizable population and commercial base for supporting viable public transit. Mixing uses can enhance the vitality and perceived security of an area by increasing the number of people on the street so that streets, public spaces and pedestrian-oriented retail become places where people meet, revitalizing community life.

7. *Preserve open space, farmland, natural beauty and critical environmental areas*

   Open space provides significant environmental quality and health benefits. It protects animal and plant habitat, places of natural beauty, and working lands by removing the development pressure and redirecting new growth to existing communities. Preservation of open space combats air pollution, abates noise, controls wind, provides erosion control, and moderates temperatures. Open space also protects surface and ground water resources by filtering trash, debris, and chemical pollutants before they enter a water system.

8. *Provide a variety of transportation choices*

   Planning should better coordinate land use and transportation; increase the availability of high quality transit service; create redundancy, resiliency and connectivity within road networks; and ensure connectivity between pedestrian, bike, transit, and road facilities. In short, communities should couple a multi-modal approach to transportation with supportive development patterns, to create a variety of transportation options.

9. *Strengthen and direct development towards existing communities*

   Development should be directed towards existing communities with infrastructure, seeking to utilize the resources that existing neighborhoods offer, and conserve open space and irreplaceable natural resources on the urban fringe. Development in existing neighborhoods can also be more cost-effective. Communities benefit from a stronger tax base, closer proximity of a range of jobs and services, increased efficiency of already developed land and infrastructure, reduced development pressure in edge areas, preserving open space.

10. *Take advantage of compact building designs.*

    Compact building design is necessary to support wider transportation choices, and provides cost savings for localities. Communities seeking to encourage transit use to reduce air pollution and congestion recognize that minimum levels of density are required to make public transit networks viable. Local governments find that on a per-unit basis, it is cheaper to provide and maintain services like water, sewer, electricity, phone service and other utilities in more compact neighborhoods than in dispersed communities.

Town Boards and Commissions

To assist in the implementation of local Plans and to address community issues, the Town has several active Boards and Commissions:

- Recreation Commission, formed to create and maintain park space and recreational programs;
- Housing Commission, formed to encourage a wide range of housing options and housing affordability;
- Urban Forestry Commission, formed to protect and foster the urban forest and to promote tree plantings and the protection of significant trees within the Town;
- Planning Board, advises The Board of Alderman on issues of land use, zoning, and long range planning;
- Historic Preservation Commission, formed to protect the historical character and beauty of the Town; and the
- Greenways, Walkability, and Biking Task Force, works to implement the Greenway Master Plan and to promote connectivity for multiple modes of non-motorized transportation.

As these boards move forward in their activities, roadway and streetscape design, pedestrian, bicycle, and transit access, and greenway connectivity could be considered as part of planning and programming. Additionally, Boards and Commissions must continually communicate to ensure that each Board is aware of planning initiatives and can identify opportunities to collaborate.

Beautification and the Luther Smith Study

In the spirit of fostering characteristics that give Black Mountain its sense of place, The Town hired Luther Smith and Associates to develop plans for:

- Creating "gateway areas" that signal entrance into the Town with landscaping and attractive signage;
- Improving pedestrian linkages and the sidewalk environment to make downtown more inviting for pedestrians; and
- Improving available open spaces, street corners, and "pocket" areas within the downtown for plantings, signage, and pedestrian accessibility.

The Plan was completed in July of 2002 and could improve the "Walkability" and distinctiveness of the downtown center as well as establish beautiful entryways into the Town for visitors. At the most basic level, roadways move people and goods to destinations. Roadways, however, are able to do much more for a community. The roadways are the public realm and provide visual clues about a place and its people. The Town of Black Mountain is in need of preserving and improving these defining elements and visual clues to help define and express the values of this unique community.

Parks and Recreation

The Town of Black Mountain has an impressive park system and community recreation program for a small town. The "Sports Loop" plan, Greenway Master Plan, and recent sidewalk construction initiatives reflect the Town's commitment to improving connectivity and access to its parks for all users.

1. Lake Tomahawk Park, 401 S. Laurel Circle Drive. Includes the Jimmie McSwain Tennis Facility, Walking/Jogging Path (.55 miles), Playground, Picnic Areas, Community Garden, Covered Picnic Pavilion, Gazebo, Horseshoe Pits, Fishing Piers, Boating (no motors), Outdoor Performance Stage. Also:

Lakeview Senior Center
Course Offerings: Senior Fitness, Daily Lunch, The "Van Clan" Day Trips, Seniors on Exhibit, Bridge, Canasta, Backgammon, Billiards

Lakeview Clubhouse
Course Offerings: Black Mountain Book Club, Wood Carving, Covered Dish Dinners, Swannanoa Valley Quilters Guild, Facility Rentals

Black Mountain Swimming Pool,
Course Offerings: Seasonal Pool, Daily Swimming, Swimming Lessons

2. Cragmont Park, Cragmont Road at Swannanoa Avenue. Includes, the John Talmage Tennis Courts, Basketball Courts, and a Ball Field.

3. Carver Community Center, 101 Carver Avenue. Includes the Recreation and Parks Administrative Offices, Classrooms and Meeting Facilities, Game Room, Beach Volleyball and Basketball Courts, and a Picnic Area.

4. Black Mountain Recreation Park, Recreation Park Drive. Includes, Four Lighted Ball Fields, Multi-Purpose Field, Walking/Jogging Path, Oaks Trail, Picnic Areas, Fishing Platform, and a 9-Hole Disk Golf Course.

In addition to local parks and park programming, the Town of Black Mountain has several activities and points of interest that are significant regionally. "Old 70" an abandoned section of US70 from Old Fort to Ridgecrest attracts bicyclists and hikers, and is being developed as a regional bike trail by the NCDOT's State Bicycle Committee. Trail connections to the Blue Ridge Parkway and to Mount Mitchell may be accessed from Black Mountain and each year the Town hosts a run to Mount Mitchell that has steadily grown in popularity. The Lake Eden Arts Festival at Camp Rockmount, just outside of Black Mountain attracts hundreds of visitors for a spring and fall weekend each year.

D. Environmental Considerations

Air Quality

The citizens of Black Mountain are seeing the effects of the three major transportation-related pollutants in air quality - "criteria" pollutants of the National Ambient Air Quality Standards (NAAQS) that were established by EPA in response to the Clean Air Act (CAA):

- Ozone (O_3) and its precursors – volatile organic compounds (VOC) and nitrogen oxides (NO_x). Ozone at ground level is formed when pollutants emitted by cars, power plants, industrial boilers, refineries, and other sources react chemically in the presence of sunlight.
- Particulate Matter (PM) – both "fine particles" (less than 2.5 micrometers) and "course particles" (2.5 to 10 micrometers) - is a mix of solids and liquid droplets in air that come from combustion, including motor-vehicles, power plants, outdoor burning, and some industrial processes.
- Carbon Monoxide (CO), an odorless, colorless gas, forms when carbon in fuels does not completely burn. It comes from vehicle exhaust and other fuel combustion processes.

The CAA Amendments of 1990 and the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 tied air pollution regulations to transportation planning by requiring state implementation plans (SIPs) and "transportation conformity" processes to demonstrate that transportation plans and programs keep emissions within required limits.

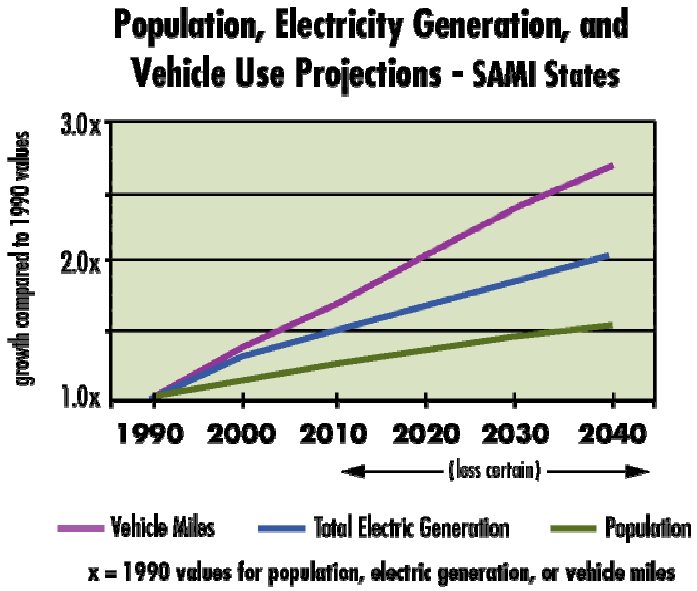
The Buncombe County area is monitored for ozone and particulates and exceeded the 8-hour ozone limit for the years 2000-2002. Buncombe County also was in danger of violating the 1997 CAAA health standard for $PM_{2.5}$ in 2004, but is currently not projected to violate. Particulate matter is still a concern however as it not only can have adverse health impacts, but can also increase haze that decreases mountain views, impacting our area's economic reliance on a tourist industry based on the beauty of the Blue Ridge Mountains.

Carbon Monoxide (CO) has not been monitored in our area, but is still a concern. According to EPA's *Air Quality Index, A Guide to Air Quality and Your Health* (August, 2003), vehicle exhaust contributes to roughly 60% of all CO emissions nationwide and can be extremely harmful.

Fortunately in 2003, good weather combined with improvements by Progress Energy on their Plant at Lake Julian, lowered Buncombe's three-year average for ozone and particulates, bringing it within EPA guidelines. However, the area is still susceptible to possible non-attainment designation and the haze and pollution it represents. As an area that relies on a tourism industry based on mountain views and outdoor activity, addressing air quality through transportation and community planning is an important investment in the area's economic and public health.

People are driving more, and unless transportation planning can reduce the Vehicle Miles Traveled (or "VMT") locally, ozone, PM, and CO generated from vehicles will continue to grow, even as other emission reducing factors - such as improvements to power plants, "clean diesel" technology, mandatory vehicle emissions testing and impacts of the Clean Smokestacks Act - are felt. Regional data from the Southern Appalachians Mountains Initiative (SAMI), a consortium created to identify strategies to prevent future adverse air quality effects in Southern Appalachia, indicates that VMT will outpace both total electric generation demand and population into the future.

Projections of population, electricity demand, and VMT in the SAMI States From 1990 to 2040.
(SAMI Final Report, p. 2.4)
http://www.saminet.org/



Local Governments such as the Town of Black Mountain must therefore continue to work with the FBRMPO and with each other to promote transportation demand strategies to reduce the number of miles driven by individuals on a regular basis in order to reduce emissions and improve air quality locally. The FBRMPO is working on a Transportation Demand Management (TDM) program to include:

- The promotion of transit, bicycling, and walking;
- Carpool and vanpool or park and ride programs;
- Implementing an Ozone Action Day Program;
- Working with businesses to promote employer-based TDM measures such as telecommuting, scheduling options, and transportation incentives; and
- Community outreach and education programs.

With over two-thirds of the population commuting, Black Mountain is a good market for alternatives to single-occupancy vehicle travel, including transit, carpooling and passenger rail. With a vibrant downtown and proposed intermodal-transit center and rail station, the Town has several locations where sidewalks and greenways will allow people alternative means of travel other than the automobile.

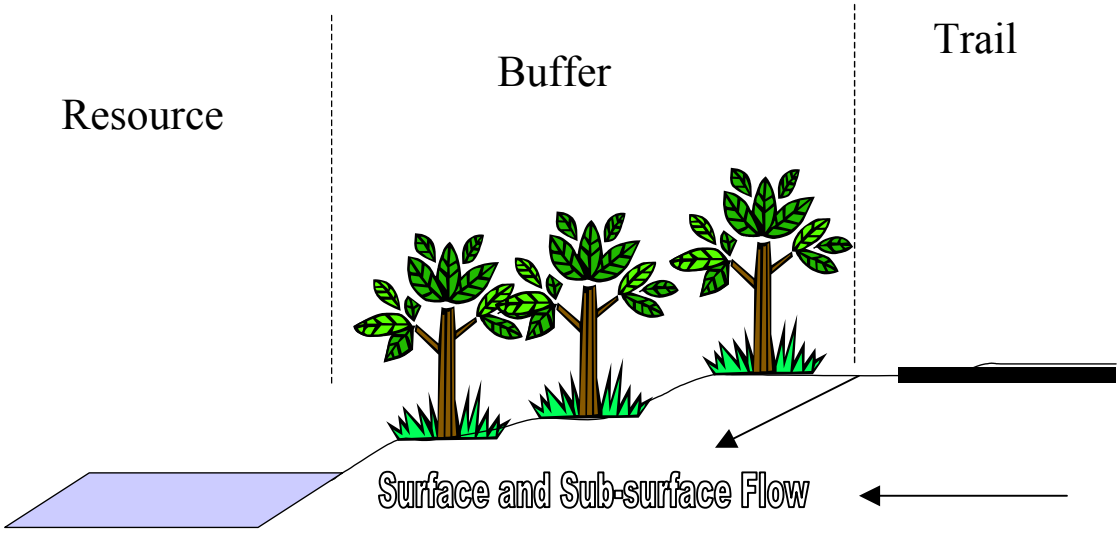
Water Quality and Stormwater Run-off

Black Mountain and Montreat are located near the top of the Swannanoa River watershed and some major tributaries flow through the Town including, Tomahawk Branch, Camp Branch, and Flat Creek. As areas within the Town and areas at higher elevations that surround the Town are developed, run-off from stormwater or snowmelt and the erosion they can cause will become increasing concerns. Already, the area around Flat Creek Road and Flat Creek are experiencing stormwater management problems during times of heavy rain.

The Town of Black Mountain will have to implement additional regulations and planning for stormwater run-off as part of the Phase II Regulations of the Federal Clean Water Act, and recently submitted a NPDES application to the NC Division of Water Quality. What this means for transportation planning in Black Mountain, is that road improvements and other improvements, such as sidewalks, gateways, greenways and urban landscaping, should be evaluated for their impact on, and opportunity to, manage stormwater.

Because the Greenway Master Plan follows Flat Creek and the Swannanoa River, the Town should consider designs that utilize greenway construction to protect stream banks, restore native vegetation, and establish areas to slow down and filter run-off before it reaches the stream. This type of trail design can also incorporate educational opportunities that relate to the larger watershed and local stormwater management policies and public awareness efforts.

Greenways can create buffer areas that protect the stream bank from erosion and create a vegetative area to trap and treat run-off



III. Vision and Goals for Transportation in Black Mountain

The transportation system in Black Mountain serves an important role in moving people and goods to local and regional destinations and providing access to homes and businesses. But beyond these basic functions, there lies greater potential for transportation systems to truly serve the community – by promoting economic development, defining community character, and creating a public realm that instills pride and fosters civic activity. The transportation system can help the community achieve a broad range of goals and realize an overall vision.

Automobiles will continue to be a primary means of travel in Black Mountain far into the future and good trucking and freight access to I-40 will play a vital role in the Town's economy. So it follows that basic improvements to streets and highways, as well as interstate access will be an important part of transportation planning.

Planning for vehicles, however, should be balanced with planning for other modes of transportation and community concerns for economic development, environmental protection, tourism, historic preservation, and civic character. By embracing and promoting walking, bicycling and public transit, small businesses and downtown shops benefit from easy access to the sidewalk and the opportunity to attract customers through storefronts and window displays. Accessible connections that link neighborhoods as well as the several hotels, inns, and bed and breakfasts to downtown create easy opportunities for visitors and residents to spend dollars at local restaurants and shops. The development of a greenway and trail system creates opportunities for everyone to enjoy the beauty of the area and exercise, creating attractions that contribute to the high quality of life and a boost to the small business economy.

Vision Statement:

In the future, the Black Mountain community envisions a transportation system with a network of well-maintained and safe roadways that can accommodate freight, local and seasonal traffic. Within this network, people can access parks, neighborhoods, the elementary and primary schools and downtown through an integrated system of streets, sidewalks, bike lanes and greenways. Local and intercity bus service and passenger rail are utilized transportation options for visitors and residents alike. Cut-through or regional traffic does not clog neighborhood streets and neighborhood traffic flows smoothly and safely.

Streets are welcoming for people who choose not to drive or are unable to drive because of age, income or disability. Visitors to Black Mountain who arrive by train, bus, or automobile will be able to enjoy area parks, trails, services and shopping without needing to drive. The young and the old alike will feel safe enough to walk or ride a bike, and the Town is considered one of the most "walkable" and bikable communities in Western North Carolina.

Industries and businesses along US70 in the western part of Town are revitalized with the help of interstate access, the development of a Black Mountain Campus of Montreat College, and improvements to US70 that include sidewalks, landscaping, and access management features. US70 is a well–coordinated, unified corridor that reflects the character of Black Mountain and attracts economic investment.

At the perimeter of Town, along US70 east and west, and NC9 at the Interstate, landscaping, signs, and other treatments will create gateways that signal entrance into a unique and prosperous community.

At the center of Town, mobility is improved with decreased congestion at the intersection of NC9 and US70 and improvements to traffic circulation, signals, crosswalks and parking throughout the downtown district. A new investment and development opportunity is created with a road connecting NC9 with East State street, eliminating an at-grade railroad crossing and diverting through-traffic from the center of town.

The transportation system in Black Mountain contributes to the community's high quality of life and scenic beauty, so that Black Mountain continues to be the "front porch of Western North Carolina" – a great place to visit and a great place to work and live.

Goals:

1. Develop a transportation system that supports the Town Comprehensive Plan and promotes economic development and goals for long-range growth.

2. Create a safe and efficient network of streets and highways to provide good mobility and access, with a strong emphasis on quality design that reflects the character and beauty of the Town.

3. Improve inter-city transportation options and connections by supporting State efforts to establish passenger rail service from Salisbury, NC to Asheville, NC with stops in Black Mountain.

4. Establish an intermodal-rail station and transit center in downtown.

5. Support a public transportation system that effectively serves travel within the Town and to further destinations such as Warren Wilson College, Montreat College, the City of Asheville, and the Regional Airport.

6. Promote the continued vitality of downtown Black Mountain through beautification and improvements to streets, sidewalks, crosswalks and greenways.

7. Provide a network of sidewalks, greenways and pedestrian and bicycle facilities that create a safe and convenient environment for pedestrians, bicyclists, wheelchairs, and other users throughout the Town.

IV. System Plan and Strategies

A. Streets and Highways

Goal 1: Develop a transportation system that supports the Town Comprehensive Plan and promotes economic development and goals for long-range growth.

Goal 2. Create a safe and efficient network of streets and highways to provide good mobility and access, with a strong emphasis on quality design that reflects the character and beauty of the Town.

Strategies for Consideration:

1. Continue to work with local citizens, the MPO, the Local Division Office and the NCDOT State Board Member to move the **I-40, Blue Ridge Road Interchange Project** (TIP I-4409) forward through the planning process.

   The I-40, Blue Ridge Road interchange will meet several needs including economic development, congestion, and I-40 access.

   With two-thirds of the Black Mountain population commuting, improved highway access is important. With downtown Black Mountain growing economically, truck traffic through downtown will be a concern both for how it contributes to congestion and for the impacts to pedestrian and automobile traffic safety. Additionally, There are several economic development benefits for the west end of US70 and the local industries. If the landowners of the Beacon manufacturing site move forward with EPA Brownfields designation, the Town should work with the MPO and the Land-of-Sky Regional Brownfields Initiative to encourage the connection between Brownfields and Transportation Planning. An EPA fact sheet on Transportation and Brownfields and contact information is located as an Appendix to this report.

   In this effort, it is important to work with local residents and businesses on design and impact issues. The initial feasibility study provides only a concept of where the intersection may go and does not provide details on ramp location or design. Opportunities to involve local citizenry in the design process to create a "win/win" situation for the proposed interchange area can be built into the plans trough a **community charette** or planning process.

2. Conduct a **corridor study or small area plan for US70** from Grovestone Road to Cragmont Road. This Study should include, but not be limited to:

   - Land-use and access impacts of the I-40, Blue Ridge Road Interchange. The Feasibility Study for this project indicated the relocation of 18 residences and 8 businesses, as well as the re-alignment of Recreation Park Road. Coordinated planning between NCDOT and the community could evaluate project alternatives to minimize impact, improve Park connections, and encourage use of the Interchange.

   - Gateway features at the entrance to Town at US70 and Grovestone and at the intersection of Old 70 and US70 as recommended in the Luther Smith Study, as well as on the East part of US70 in conjunction with the I-40 ramp near Padgetown Road (see recommendation #8).

   - Pedestrian, Bicycle, transit connections and access to the Montreat Campus at Black Mountain site. As part of site planning, the Town should request the College to create connectivity and to dovetail with the Town's Greenway Master Plan and access to Black Mountain Recreation Park.

   - Sidewalk construction (details below)

   - Transit stops with amenities such as benches, shelters, and posted schedules on both sides of US70.

   - Access Management techniques to control driveway access and left turns, while making the road safer for pedestrians and still providing an easily negotiable thoroughfare for trucks. Access Management techniques such as planted medians and points of access that are designed around development nodes not only make roads safer and more efficient, but also create opportunities for additional landscaping and beautification efforts.

3. Seek funding to **conduct a traffic operations analysis and to upgrade the signage and signal system downtown**, creating an integrated system that coordinates timing of lights at related intersections, and establishes "lead pedestrian intervals" and pedestrian activated signals that improve pedestrian safety in coordination with controlled traffic movement. The Town can ask that this request be added to the Priority Needs List for the FBRMPO and for consideration as part of the regional Congestion Management System strategy.

   The NCDOT just completed a Traffic Signal System Feasibility Study in October 2002, by HNTB North Carolina, PC. Town leadership could explore opportunities for HNTB to dovetail a study for Black Mountain as this Asheville area project moves forward, possibly resulting in savings on consultant fees. The Study should include evaluation of hardware, software, phasing (traffic movements), and timing needs. Any signal and/or signage improvements should particularly address concerns at the following points:

- The intersection of US70 (State Street) and NC9 and points east and west of the intersection along State Street;
- NC9 and Sutton Ave. (near the railroad crossing and often backed up);
- Dougherty and State Streets (signal timing inhibits traffic flow)
- Dougherty and Sutton Ave. (stop signs are confusing, and drivers run through them causing a hazard for both motorists and pedestrians).
- Sutton Avenue at Cherry Street and Black Mountain Avenue (this should be planned in coordination with the proposed rail and transit center development)
- At-grade crossings and the safety and congestion impacts of freight and future passenger rail service to traffic in and around downtown. One approach would be to ensure that consideration is given for traffic movement in and around the rail line and proposed station location as part of NCDOT's station study.
- Crosswalk improvements and pedestrian safety at all points and in concert with recommendations from the Luther Smith Study on pedestrian circulation routes.

4. In addition to traffic flow and signalization at intersections, concerns have been expressed for traffic and pedestrian safety within the downtown commercial district, particularly along **Cherry Street**. One point of discussion among the community has been the idea of turning Cherry Street into a one-way corridor. There may be simpler ways to increase street safety with traffic claming measures, improved crosswalks at corners and the installation of a crosswalk mid-block (see Traffic Calming and Access Management section). Such options for Cherry Street should be included in the new rail/transit station design.

5. Road **widening and installation of improved shoulders** in conjunction with resurfacing on any State Roads, particularly Cragmont, Grovestone, North Fork, and Flat Creek roads.

6. Develop a local **Traffic Calming Policy** and protocol for managing requests from neighborhoods or commercial areas for traffic calming. This could include a phased-in approach, utilizing the "three e's" in this order: enforcement, education, and engineering. As a first step, the Town should start with enforcement and education, partnering with neighborhood associations and neighborhood watch programs to step up patrols and circulate information in neighborhoods, before engineering solutions are considered. Engineering solutions should only be pursued after study to determine the most appropriate solution and any accompanying traffic and noise impacts of that identified solution. Additionally, there should be strong support from the surrounding residents before any physical measure is installed.

7. Continue to support **NC9 to Hemphill/Padgetown Road Connector** as a new roadway project for consideration on the MPO's Priority Needs List. This project, which will divert east-bound and through-traffic from the congested US70 and NC9 Intersection can also be included in the Congestion Management System strategy for the MPO. In addition to alleviating congestion, this project will open up many acres of currently undeveloped property (over multiple parcels) creating economic and housing development opportunities.

8. Conduct a **Traffic Study to redesign the area from the I-40, Exit 65 off-ramp, along East State Street to NC9**. This intersection of East State Street, the Exit Ramp and Padgetown Road should provide a "gateway" or entrance to the Town, signaling to Interstate travelers that they have arrived in Black Mountain, and should regulate traffic movement, slowing exiting-Interstate traffic down to a safe speed, and redirecting through-traffic to access State Street east or west. The design should accommodate the proposed connector to NC 9 in the vicinity of Bi-Lo.

   Just west, State Street is clogged with school traffic, Monday through Fridays during drop-off and pick-up times for students. Any design should consider this recurring congestion issue. One approach could be to move the Primary School drop-off and pick up area, so that school traffic could use Padgetown Road, Flat Creek Road, or Pinetree Drive. Another could be to re-design and widen the entire section of East State Street from the I-40 Ramp to the NC9 intersection.

   The intersection of East State Street, Padgetown Road and the Exit 64 Ramp should be assessed by an NCDOT traffic engineer (since it involves State and Federally owned roads), to determine the best solution and suitability for a roundabout. Roundabouts must be designed within the context of the situation.

Looking east between US70 to Ridgecrest and the I-40 Exit Ramp

Intersection of US70 and Padgetown Road

At the suggestion of consultant Dan Burden, the Town and NCDOT engineers looked at the installation of a roundabout at the **NC9/US70 Intersection.** The NCDOT engineer determined that "geometric constraints of existing buildings, sidewalks, and other physical features makes this an inappropriate location for construction of a roundabout." (Memorandum from James Dunlop Attached).

It is important to know that roundabouts or traffic circles are not always conducive to pedestrian movements. Since this intersection remains a concern for both pedestrian and motorist safety and congestion impacts, other design and improvements should be considered, such as the upgrade in signalization mentioned above and improved crosswalk markings and alignments. Other techniques such as a raised or textured medians, or bulb-outs at sidewalk corners may not be feasible because of high traffic and truck use.

Intersection of NC9 and US70

B. Rail and Transit

Strategies for Consideration:

1. Continue to work with the NCDOT Rail Division on the **design study for the proposed rail station,** so that community goals are incorporated, including traffic movement and pedestrian improvements in the station area, bus transit exit and access, parking, and complementary uses for the station itself. The Town of Salisbury offers a good example of how a station can meet multiple goals with coordinated planning and community participation.

2. Continue to **promote passenger rail service with State and Federal Legislators**. While the idea of passenger rail service to Western North Carolina remains a popular idea, there are those who question its legitimacy and feasibility for WNC. It is important for a local community such as Black Mountain to continue to push for the service at all levels of government.

3. Promote passenger rail for economic development. The track from Old Fort to Black Mountain is known as "the Loops" for its circuitous route up the mountain and is a marvel of engineering and incredible views. This section of track by itself could and should be promoted for its tourism potential – similar to the Great Smoky Mountain or the Durango to Silverton Narrow Gauge Rail Roads.

4. The FBRMPO will convene a transit service providers work group for the Long Range Transportation Plan and to identify areas for collaboration. The Town should ask for **improved coordination between Mountain Mobility and Asheville Transit Services** and amenities such as shelters, cement pads, or benches at key bus stops in Black Mountain.

5. Determine feasibility of a future **fixed route between Black Mountain and Montreat in conjunction with Montreat College** and the development of their proposed Black Mountain Campus.

6. Establish a **"Commuter Lot"** with signage and bus stop access in conjunction with the Asheville Transit Intercity Route by designating an area in an existing parking lot where commuters can park their car in order to catch the bus.

C. Pedestrian, Bicycle, and Greenways

Goal 6. Promote the continued vitality of downtown Black Mountain through beautification and improvements to streets, sidewalks, crosswalks and greenways.

Goal 7. Provide a network of sidewalks, greenways and pedestrian and bicycle facilities that create a safe and convenient environment for pedestrians, bicyclists, wheelchairs, and other users throughout the Town.

Strategies for Consideration:

1. Continue plans for new sidewalk construction on the north side of **US70/State Street** from Blue Ridge Road to the end of the existing sidewalk at Cragmont Road (an estimated 4,330 linear feet). New sidewalk construction along the south side of US70 should be evaluated as part of pedestrian access to Montreat's Black Mountain Campus. Sidewalk improvements and extensions should also be considered from the Center of Town at NC9 to Padgetown Road and the Primary School.

   Sidewalk should be designed for 5 feet in width and be pulled back from the edge of pavement by a minimum of 2 feet – more wherever possible. Five feet is the NCDOT standard for thoroughfares and is wide enough to accommodate wheelchairs and pedestrians. A two-foot or greater planted strip between the edge of pavement or curb and the sidewalk creates a buffer for sidewalk users.

   The Town has already hired McGill and Associates to do develop engineering plans for the sidewalk construction from Blue Ridge Road to Cragmont Road and has committed to dedicating some funds. The Town may be eligible to receive some small urban funds from NCDOT to assist with installation of curb and gutter where needed. NCDOT's Pedestrian Policy Guidelines are attached.

   Sidewalk construction can be extremely expensive in Western North Carolina because of limited local availability of construction materials. The City of Asheville has paid anywhere from $20 to $70 per linear foot for sidewalk construction done through contracting, depending on design and engineering. This project could therefore cost well over $200,000 to construct.

2. Implement the Luther Smith and Associates recommendations for **pedestrian circulation for downtown in combination with the NCDOT study for the rail station**. This effort should focus attention on Cherry and Sutton Streets. If the Town is successful in getting a warrant study funded for traffic signals downtown, then pedestrian signals should be considered at all intersections.

3. Improve alignment and striping of crosswalks at the **intersection of NC9 and US70.**

4. Continue implementation of the **Greenway Master Plan**. Implementation could include developing an agreement in principle with the Municipal Sewage District to share easements, consideration for greenways in the Town's Zoning re-write process and grant development. MPO staff is working with the MSD right-of-way agent and Committee to develop a joint-use agreement to allow MSD easements to be utilized for greenways in certain cases in both the City of Asheville and Black Mountain. The Town of Fletcher has already successfully developed a similar agreement.

   The Town should also consider focusing on the Primary School and the Flat Creek Trail sections as a priority for a number of reasons:

   - This greenway provides a pedestrian route north to south, as an alternative to NC9, linking the School and State Street to neighborhoods and the upper section of Flat Creek Road and the Montreat Gates.

   - Existing MSD line provides an opportunity for joint use of right-of-way.

   - Current development at Cotton Creek may be indicative of future housing projects in the area. Right-of-way should be secured along this corridor as soon as possible.

5. Re-evaluate the request for **pedestrian facilities along NC9 as part of the Priority Needs List and the TIP** through the MPO, perhaps amending this request to connect to include a greenway section. The town should continue to incrementally add sidewalk on the east side of NC9, with the goal of getting at least to Cotton Street, if not to the Montreat gate. Turning east on Cotton, an on-road pedestrian and bicycle route could be developed to link to the greenway trail along the Flat Creek Sewer easement. This would establish a sidewalk/on-road/greenway route that would link downtown to Montreat.

6. Coordinate with the MPO and the Buncombe County Health Department to **educate the public about the health and environmental benefits of walking and bicycling.** This could include, but not be limited to:

   - Walking and bicycling programs offered through the Parks and Recreation Department;
   - Educational material offered at Town Hall and on the Town website;
   - Guided trail walks to educate residents and guests about the history and environment of the Black Mountain area or introductions to future greenway alignments;
   - Organized "Walk to School" Day activities;
   - Participation in and promotion of regional "Strive-Not-to-Drive" Day events.

V. Traffic Calming and Access Management

Community input has shown that there is tremendous interest in traffic calming and access management for a variety of reasons:

- Concerns about cut-through traffic and traffic speed on neighborhood streets;
- Desire to create a safer environment for pedestrians, bicycles, and wheelchairs in all areas of Town;
- Desire for landscaping to beautify the streetscape in downtown and along US70/State Street;
- Desire to improve safety at intersections throughout town – especially NC9 and US70, the area around the primary school, and the length of US70/state Street through Town.

Traffic Calming and Access Management techniques can be effective engineering approaches to meeting these concerns, but must be chosen, designed, and located appropriately and with community consensus. The following background information is provided to assist Town leaders in determining what types of techniques they should consider as well as where those designs should be.

A. Traffic Calming Techniques and Design Considerations

Definitions of traffic calming vary, but they all share the goal of reducing vehicle speeds, improving safety, and enhancing quality of life. Some include all three "Es," traffic education, enforcement, and engineering. Others focus on engineering measures, but include all kinds. Still others focus on engineering measures that compel drivers to slow down, excluding those that use barriers to divert traffic.

The Institute of Transportation Engineers in "Traffic Calming: State of the Practice" defines it as "involving changes in street alignment, installation of barriers, and other physical measures to reduce traffic speeds and/or cut-through volumes, in the interest of street safety, livability, and other public purposes." The ITE Subcommittee on Traffic Calming, as "the combination of mainly physical measures that reduce the negative effects of motor vehicle use, alter driver behavior and improve conditions for non-motorized street users."

In the United States, traffic calming was practiced as early as the 1960s and 1970s in western cities. The first national study of traffic calming was completed circa 1980. In 1998, the Federal Highway Administration (FHWA) funded a study resulting in the ITE report, *Traffic Calming: State of the Practice*, by Reid Ewing.

Some Traffic Calming techniques may be appropriate to situations in Town. A traffic calming "tool box" may be found at: http://www.trafficcalming.org/. (Selected pages from that website follow for reference.)

On smaller, neighborhood streets:

- **Traffic Circles** are raised islands, placed in intersections that force traffic to negotiate around it – reducing travel speed. Depending on the given location, they can be small in diameter so as not to require any changes to the existing road dimensions, but be large enough to require automobile traffic to reduce speed in order to go around the circle. These work best on streets that are not used by trucks or large vehicles – however, they must be designed so as to not inhibit emergency vehicle access.

  Johnson City, Tennessee, and Athens, GA have been successful in installation of several small scale and low cost traffic circles within residential neighborhoods. Both have partnered with neighborhood associations on the initial design and implementation of the traffic circles and to maintain plantings within the circle itself once it was installed. Before installation, Johnson City set up "test" circles in parking lots that reflected the dimensions of proposed intersections and the proposed diameters of traffic circles. Emergency personnel (City fire department and ambulance service), as well as neighborhood representatives were able to test drive vehicles around the circle and provide feedback to tweak the design.

- **Center Islands or "mid-block" medians, or "narrowings"** are elongated islands in the middle of streets that have the same effect as traffic circles, but are installed within the entrance of a street or mid-block, rather than within the intersection. Often these are used at the entrance to subdivisions or neighborhoods as "gateway features" and can incorporate plantings and low-level signage (so as not to impair line of sight of motorists). These can also be incorporated as part of a crosswalk – creating an island that a pedestrian can utilize as a refuge - for walking just half-way across a street and then stopping to let a car pass in order to cross the other half of a street.

- **Chicanes** are similar to center islands, causing traffic to turn slightly and to slow down in order to negotiate the structure, but are created by bulbing-out edges of streets in order to make an "s" curve. Often, chicanes are designed around on-street parking spaces and in coordination with crosswalks.

- **Speed bumps, humps, or tables** (wider versions of speed bumps) are often use in parking areas, business parks, and even in neighborhoods as a low cost way to slow down traffic. One version of a speed table is a "raised crosswalk" where the speed hump itself is actually striped and designed for the purpose of a crosswalk. These types of measures should be used with great caution in residential areas because they create noise when cars and trucks go over them and disrupt the street view and the street space.

In the central business district of downtown Black Mountain and in conjunction with the development of a inter-modal transit center and rail station:

- **Chicanes, center islands,** and traffic calming techniques used on smaller streets may be appropriate.

- **Textured pavements, or stamped asphalt** can accentuate crosswalks or intersections and make them more visible, and is recommended as part of the Luther Smith and Ass. Study. Local contractors APAC and Tarheel Paving are certified in Streetprint application. This technology stamps patterns on asphalt and has been approved by NCDOT for use on State roads.

- **Chokers** narrow the roadway by building out from the curb or sidewalk. In addition to slowing down traffic in the roadway, these structures can create additional sidewalk space that can be used for outdoor seating, benches, garbage cans, bike racks, plantings or other amenities needed in downtowns. This type of techniques might be appropriate along Cherry and Sutton Streets where there are many smaller stores and restaurants and pedestrians may want to cross mid-block.

On arterial roads (US70 – East and West State Street; and NC9 – south of the rail road tracks) traffic calming should only be used at selective locations such as near the primary school, and should slow down traffic or redirect it just enough to still be efficient for traffic movements for all sized vehicles.

- **Roundabouts** must be designed carefully to accommodate traffic needs of any given location. The area of the Exit 65 Ramp, East State Street, Padgetown Road, and potentially the new connector road to NC 9 (at Hemphill Drive), could be a candidate for a roundabout but would require redesign and reconstruction of how the roads come together. This may be possible because of existing interstate right-of-way and additional right-of-way obtained as part of the new connector road. As part of the connector road request, improved design of the intersection should be considered and NCDOT must participate in and approve the design. The intersection of NC9 and US70 is not appropriate for a roundabout at this time.

- **Planted medians or islands** can be utilized on major thoroughfares as part of access management and traffic claming. These are larger, extended versions of center islands that are placed within the center lane of multi-lane cross-sections. These restrict left hand turns, tapering to a turn lane only at strategic points. The Town of Fletcher worked with NCDOT to create planted medians at both ends of Town along US25 as part of a "gateway" to signify the entrance into town and to slow traffic down as it entered the commercial district. They were implemented as part of new construction along US25 after a comprehensive corridor study was completed and approved by Town Board of Alderman. A case for planted islands could be made along US70 and the Town should work with NCDOT staff to evaluate opportunities. A request for an area study along US70 could be requested through the MPO.

Selected examples from: (from: ***www.trafficcalming.org/***)

Traffic Circles

a.k.a. rotaries, intersection islands

Traffic circles are raised islands, placed in intersections, around which traffic circulates.

Good for:

- Calming intersections, especially within neighborhoods, where large vehicle traffic is not a major concern but speeds, volumes, and safety are problems.

Advantages:

- Traffic Circles are very effective in moderating speeds and improving safety;
- If designed well, they can have positive aesthetic value; and
- Placed at an intersection, they can calm two streets at once.

Disadvantages:

- They are difficult for large vehicles (such as fire trucks) to circumnavigate;
- They must be designed so that the circulating lane does not encroach on the crosswalks;
- They may require the elimination of some on-street parking; and
- Landscaping must be maintained, either by the residents or by the municipality.

Cost Estimate: varies by materials used and the amount of area covered

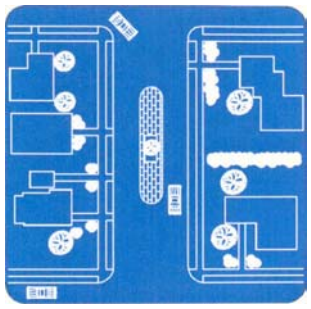
Effectiveness:

- Avg of 11% decrease in the 85th percentile travel speeds, or from an average of 34.1 to 30.2 mph (sample of 45 sites).
- Including a large sample from Seattle, an avg of 73% decrease in accidents, or from an avg of 2.2 to 0.6 accidents per year (from a sample of 130 sites).
- Excluding sample from Seattle, an avg of 29% decrease in accidents, from 5.9 to 4.2 accidents per year (from a sample of 17 sites).

Similar Measures:

- By placing a raised island in a midblock location, you have a Center Island Narrowing.
- By enlarging the intersection and the center island, inserting splitter islands at each approach, setting back the crosswalks away from the circulating lane, and implementing yield control at all approaches, you have a Roundabout.

Center Island Narrowings



a.k.a. midbock medians, median slowpoints, median chokers

A center island narrowing is a raised island located along the centerline of a street that narrow the travel lanes at that location. Center island narrowings are often landscaped to provide a visual amenity. Placed at the entrance to a neighborhood, and often combined with textured pavement, they are often called "gateway islands." Fitted with a gap to allow pedestrians to walks through at a crosswalk, they are often called "pedestrian refuges."

Good for:

- Entrances to residential areas;
- Wide streets where pedestrians need to cross.

Advantages:

- Center Island Narrowings increase pedestrian safety;
- If designed well, they can have positive aesthetic value; and
- They reduce traffic volumes.

Disadvantages:

- Their speed-reduction effect is somewhat limited by the absence of any vertical or horizontal deflection; and
- They may require elimination of some on-street parking.

Cost Estimate: $8,000 - 15,000 (Portland, OR). $5,000 (Sarasota, FL)

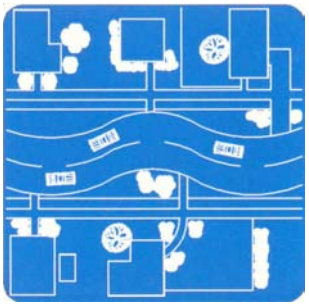
Effectiveness:

- Average of 4% decrease in the 85th percentile travel speeds, or from an average of 34.9 to 32.3 miles per hour (combined average for various narrowing measures, taken from a sample of 7 sites).

Similar Measures:

- If a roadway is narrowed out from the curbs at an intersection, you have a Neckdown;
- If a roadway is narrowed outward from the sidewalk or planting strip, rather than from the centerline, you have a Center Island Narrowing.

Chicanes



a.k.a. deviations, serpentines, reversing curves, twists

Chicanes are curb extensions that alternate from one side of the street to the other, forming S-shaped curves. Chicanes can also be created by alternating on-street parking, either diagonal or parallel, between one side of the street and the other. Each parking bay can be created either by restriping the roadway or by installing raised, landscaping islands at the ends of each parking bay.

Good for:

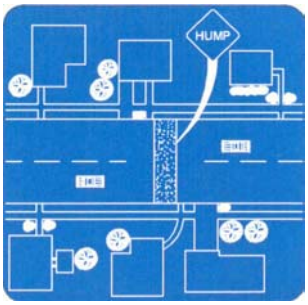
- Locations where speeds are a problem but noise associated with Speed Humps and related measures would be unacceptable.

Advantages:	Disadvantages:
• Chicanes discourage high speeds by forcing horizontal deflection; and • They are easily negotiable by large vehicles (such as fire trucks) except under heavy traffic conditions.	• They must be designed carefully to discourage drivers from deviating out of the appropriate lane; • Curb realignment and landscaping can be costly, especially if there are drainage issues; and • They may require the elimination of some on-street parking.

Cost Estimates: $14,000 (Sarasota, FL)

Effectiveness:	Similar Measures:
• No data has been compiled on the effects of chicanes.	• By placing the edge islands opposite each other (without staggering them), you have a Choker.

Speed Humps



a.k.a. road humps, undulations

Speed humps are rounded raised areas placed across the roadway. They are generally 10 to 14 feet long (in the direction of travel), making them distinct from the shorter "speed *bumps*" found in many parking lots, and are 3 to 4 inches high. The profile of a speed hump can be circular, parabolic, or sinusoidal. They are often tapered as they reach the curb on each end to allow unimpeded drainage.

Good for:

- Locations where very low speeds are desired and reasonable, and noise and fumes are not a major concern.

Advantages:

- Speed Humps are relatively inexpensive;
- They are relatively easy for bicycles to cross if designed appropriately; and
- They are very effective in slowing travel speeds.

Disadvantages:

- They cause a "rough ride" for all drivers, and can cause severe pain for people with certain skeletal disabilities;
- They force large vehicles, such as emergency vehicles and those with rigid suspensions, to travel at slower speeds;
- They may increase noise and air pollution; and
- They have questionable aesthetics.

Cost Estimates: $2,000-2,500 (Portland, OR), $2,000 (Sarasota, FL), $2,000 (Seattle, WA)

Effectiveness:

- For a 12-foot hump:
  - Average of 22% decrease in the 85th percentile travel speeds, or from an average of 35.0 to 27.4 miles per hour; (sample of 179 sites).
  - Average of 11% decrease in accidents, or from an average of 2.7 to 2.4 accidents per year (sample of 49 sites).
- For a 14-foot hump:
  - Average of 23% decrease in the 85th percentile travel speeds, or from an average of 33.3 to 25.6 miles per hour (from a sample of 15 sites).
  - Average of 41% decrease in accidents, or from an average of 4.4 to 2.6 accidents per year (sample of 5 sites).

Similar Measures:

- By lengthening the hump with a flat section in the middle, you have a Speed Table.
- By turning an entire crosswalk into a speed hump, you have a Raised Crosswalk; and
- By raising the level of an entire intersection, you have a Raised Intersection

Textured Pavements

a.k.a. cobblestone, brick pavement, stamped pavement

Textured and colored pavement includes the use of stamped pavement or alternate paving materials to create an uneven surface for vehicles to traverse. They me be used to emphasize either an entire intersection or a pedestrian crossing, and are sometimes used along entire street blocks.

Good for:

- "Main Street" areas where there is substantial pedestrian activity and noise is not a major concern.

Advantages:

- Textured Pavements can reduce vehicle speeds over an extended length;
- If designed well, they can have positive aesthetic value; and
- Placed at an intersection, they can calm two streets at once.

Disadvantages:

- They are generally expensive, varying by materials used; and
- If used on a crosswalk, they can make crossings more difficult for wheelchair users and the visually impaired.

Cost Estimate: varies by materials used and the amount of area covered

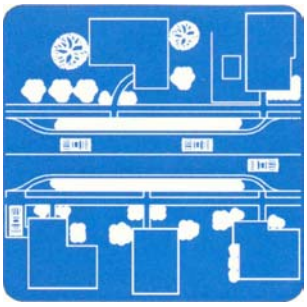
Effectiveness:

- No data has been compiled on the effects of textured pavements.

Similar Measures:

- Textured pavements are often combined with Speed Tables, Raised Crosswalk, and Raised Intersections.
- Textured pavements are occasionally combined with Speed Humps.

Chokers



a.k.a. pinch points, midblock narrowings, midblock yield points, constrictions

Chokers are curb extensions at midblock locations that narrow a street by widening the sidewalk or planting strip. If marked as crosswalks, they are also known as safe crosses. Two-lane chokers leave the street cross section with two lanes that are narrower than the normal cross section. One-lane chokers narrow the width to allow travel in only one direction at a time, operating similarly to one-lane bridges.

Good for:

- Areas with substantial speed problems and no on-street parking shortage.

Advantages:	**Disadvantages:**
• Chokers are easily negotiable by large vehicles (such as fire trucks); • If designed well, they can have positive aesthetic value; and • They reduce both speeds and volumes.	Their effect on vehicle speeds is limited by the absence of any vertical or horizontal deflection; They may require bicyclists to briefly merge with vehicular traffic; and They may require the elimination of some on-street parking.
Cost Estimate:	$7,000 - 10,000 (Portland, OR).
Effectiveness:	**Similar Measures:**
• Average of 4% decrease in the 85th percentile travel speeds, or from an average of 34.9 to 32.3 miles per hour (combined average for various narrowing measures, taken from a sample of 7 sites).	• If a roadway is narrowed at an intersection, you have a Neckdown; • If a roadway is narrowed from the centerline, rather than from the curbs (i.e. using a raised island), you have a Center Island Narrowing

Roundabouts

a.k.a. rotaries

Roundabouts require traffic to circulate counterclockwise around a center island. Unlike Traffic Circles, roundabouts are used on higher volume streets to allocate right-of-way between competing movements.

Good for:

- Locations with a history of accidents;
- Intersections where queues need to be minimized;
- Intersections with irregular approach geometry;
- Providing inexpensive-to-operate traffic control as an alternative to a traffic signal;
- Handling a high proportion of U-turns; and
- Locations with abundant right-of-way.

Advantages:

- Roundabouts can moderate traffic speeds on an arterial;
- They are generally aesthetically pleasing if well landscaped;
- They enhanced safety compared to traffic signals;
- They can minimize queuing at the approaches to the intersection; and
- They are less expensive to operate than traffic signals.

Disadvantages:

- They may be difficult for large vehicles (such as fire trucks) to circumnavigate;
- They must be designed so that the circulating lane does not encroach on the crosswalks;
- They may require the elimination of some on-street parking; and
- Landscaping must be maintained, either by the residents or by the municipality.

Cost Estimate: varies by dimensions of the roundabout.

Effectiveness:

- Average 29% reduction in accidents, with a reduction from 9.3 to 5.9 accidents per year (from a sample of 11 sites; source: *Roundabouts: An Informational Guide*).

Similar Measures:

- A small island in a neighborhood intersection, leaving the existing curbs, is a Traffic Circle.

B. Access Management Techniques and Considerations

Access Management is the implementation of design practices to control access to adjacent properties so that the roadway or thoroughfare is organized strategically to maintain efficient traffic flow and provide a development pattern that is safer for pedestrians, bicyclists, and automobiles. An effective local access management program can play an important role in reducing accidents, preserving highway capacity, and avoiding or minimizing costly roadway improvements to correct safety and congestion problems.

It can also preserve or enhance the appearance and property values of abutting development. The appropriate type of access management varies according to the roadway function and traffic characteristics, the character of the abutting land, and the long-term planning objectives. Well-designed access systems can help preserve community character, advance economic development goals, and more efficiently utilize utilities for new development or redevelopment. They can also provide easier access to and from business establishments or commercial centers. Property owners have a right to *reasonable access* to the *system* of roadways. The traveling public has a right to *mobility, safety*, and *efficient use* of the roadway system. The safe and efficient operation of roadways is dependent upon effectively managing the access to the adjacent properties.

When roadways have unrestricted or uncontrolled access, they are more likely to be hazardous and congested. Closely-spaced curb-cuts or driveways can be confusing and create situations where automobiles are moving against each other. For example, a car turning left out of a driveway, may find itself just a few feet away from a car turning right out of a neighboring driveway. Driveways that are located within close proximity to intersections can contribute to congestion as a car must stop in the roadway to turn into a driveway, or cars are stopped in the roadway to allow a car to enter from a driveway. These types of driveways are also difficult to exit in congested conditions.

Center lanes as part of 5 lanes cross-sections of road, such as found on US70, allows automobiles going opposite directions to share the center lane. These center lanes are sometimes aptly called "suicide lanes" or "scramble lanes" because they allow cars left-hand turn access in either direction, at any point in the road.

Uncontrolled left-hand turns and multiple, uncoordinated driveways, are not only dangerous for automobiles. They are particularly dangerous for bicycle and pedestrians. This is because driveways interrupt roadways and sidewalks. Along busy corridors, motorists are sometimes under pressure to exit or enter a roadway and may focus on the automobile traffic flow, without seeing a pedestrian or bicyclist. Similarly, unrestricted five lane roads with center lanes, are difficult for people to cross because there is a great distance from one side of the roadway to another.

Access Management utilizes a set of strategies to improve the safety and efficiency of traffic by reducing congestion and decreasing the number of accidents while

simultaneously preserving community character through land use planning and site design. Key elements of Access Management include:

- Interconnected street networks, including rear access roads and through streets;
- Cross access or connections between adjacent properties;
- Limited driveway openings and driveway spacing standards;
- Shared driveways and parking lots;
- Corner clearance standards;
- Intersection spacing and traffic signal timing and phasing
- Center medians and other means of restricting turns to specific locations;
- Internal circulation and connections within developments that serve motorists, bicyclists, and pedestrians.

These techniques can incorporate landscaping, traffic calming techniques, pavement textures and designs, street-lighting and signals, and other amenities that add to the streetscape and beautify the corridor. They can also reduce the number of driveways within a given distance to allow for un-interrupted passage of pedestrians and bicycles.

C. NCDOT Roadway Classification and Access Policy Considerations

Generally roadways are classified by the State into categories relative to their function in 1) serving the mobility needs of vehicles traveling through an area, and 2) providing access to properties along the roadway. These categories are:

1. Major Thoroughfare or Arterial, with the emphasis on serving through traffic and land access either restricted or provided as a tertiary function (I-40).

2. Minor Thoroughfare or Arterial, with the emphasis on traffic movement and land access provided as a secondary purpose (US70/State Street and NC9).

3. Collector Streets that carry traffic from local streets to the arterial system, with function balanced between traffic movement and land access (Old US70, Cragmont, North Fork, Blue Ridge Road).

4. Local Roadways, with a primary function of providing property access (neighborhood streets, short, downtown streets).

Access management standards and NCDOT guidelines will differ between these functional types of roadways, as will other design standards.

The NCDOT published its *Policy on Street and Driveway Access to North Carolina Highways* in 1987 and drafted an update in 2002, to regulate the location and design of street and driveway connections to the State Highway System. Key provisions include, but are not limited to:
(from: http://www.doh.dot.state.nc.us/preconstruct/traffic/driveway/Part_I.pdf)

General:

- A State permit is required prior to construction of any new access or alteration to any existing access to State-maintained roads.
- Where the City has site plan/driveway approval, the Permit must be processed and approved by the City prior to submittal to the State.
- Where City regulations are more restrictive than the State, the City regulations shall govern.

Design Standards – criteria for street/driveway connections:

- Sight distance requirements for driveways
- Vehicle stacking requirements on-site for different land uses to avoid queuing of vehicles into the roadway
- Normal limitation of no more than two combined entrances/ exits to each roadway frontage, with only one driveway permitted where frontage is less than 72 feet

- Minimum distance between driveway and adjacent roadway intersection
- Allowable driveway slopes
- Guidelines addressing the volume levels that necessitate the provision of a separate left-turn lane into the driveway, and a right-turn lane or taper for turns into the driveway
- Minimum and maximum widths of driveways
- Minimum angle of intersection,
- Minimum and maximum turn radius
- Minimum distance between driveways
- Permit applications and site plans will be submitted for concurrent review by the NCDOT and the City.
- Traffic impact studies will be required of all developments expected to generate 200 or more peak hour vehicle trips, or 2,000 or more weekday trips.
- If alternative public access is available, NCDOT can prohibit direct access of the development to the higher class route.
- Minimum and desirable separation between driveways will be increased.

Urban planners and traffic engineers have, in general, come to realize that traffic calming and access management measures must be tailored to the specific roadway, its function, and the particular situation or traffic need. Additionally, "context-sensitive design," the design of transportation facilities to match their context, is necessary to ensure that roadway facilities are consistent with the community and its goals.

Access Management as well as traffic calming measures can play a big part in transforming a problem area into one that is valued by the community and reflects its character. The key factor to successfully implementing access management or other strategies will be the development of partnerships and consistent policies among landowners, the NCDOT, the MPO, and the Town government.

VI. Zoning Considerations

There are opportunities to address traffic calming needs, access management and pedestrian, bicycle and wheelchair safety issues as part of new development regulations when Black Mountain undertakes to rewrite and update their Zoning requirements. The following zoning tools are recommended for consideration as part of the Town Zoning Re-write:

1. **Sidewalk and Greenway Regulations** for new subdivisions and other development are already in place for some situations in Black Mountain and these could expanded to include new single-family subdivisions and for multi-family developments. In areas abutting or including the Greenway Master Plan, the Town could require construction or land dedication for greenways. The local governments of Hendersonville, Fletcher and Asheville have policies in place that could provide good models.

2. **Traffic Impact Studies** ("TIS") evaluate the effect of a development's traffic on the surrounding transportation infrastructure and can be an essential part of the development review process. It should identify and address issues regarding the site plan layout and the impact of the development on the roadway, transit, pedestrian, and bicycle system. According to the *NCDOT Policy on Street and Driveway Access:*

   > "the TIS helps identify where development may have a significant impact on safety, traffic and transportation operations, and provides a means for the developer and government agencies to mitigate these impacts. Ultimately, the TIS can be used to evaluate if the scale of development is appropriate for a particular site and what improvements may be necessary, on and off the site, to provide safe and efficient access and traffic flow. Mitigation measures may involve strategies other than roadway construction or physical improvements such as changes to traffic signal timing or phasing, and transportation management strategies."

   Based on the *ITE Trip Generation Manual*, trip generation of a proposed development is the sum of the number of inbound and outbound vehicle trips that are expected for the type and size of land use. If the TIS indicates that traffic impacts will be significant the Town could require a variety of reasonable mitigation measures such as road improvements, installation of additional turn lanes, traffic calming measures or traffic signals, bus stops and pedestrian and bicycle facilities. For the Town of Black Mountain, some threshold of estimated trip generation should apply – 100 or more peak hour trips by the ITE Trip Generation Manual, for example. Another approach would be to require a TIS for developments requiring greater than or equal to "x" number of parking spaces.

The geographical scope of a TIS will depend on the size, type, and location of the development. The TIS should address any intersections where the Town identifies a concern with traffic safety or congestion, as well as conditions at the project access driveways and the key intersection(s) that provides a connection to the arterial roadway system.

3. **Access Management** requirements can govern the number and location of driveways, consistent with or enhancing NCDOT's *Policy on Street and Driveway Access to North Carolina Highways.* The City of Brevard and the Town of Fletcher have local zoning requirements that are good models. These regulations include:

   A. Establish a protocol with the NCDOT Division office so that Town Planning staff reviews curb-cut applications with NCDOT staff.

   B. Only one driveway cut or two one-way cuts divided by a distance, allowed for any single parcel. More than one driveway cut may only be allowed upon Town approval, if an assessment of site circulation and/or a traffic study is submitted which demonstrates the need for additional access.

   C. Separate driveways should not be allowed for "out lots" or "out parcels" at a larger development where reasonable access can be provided via the larger development's internal circulation system.

   D. Requirements for internal connections between abutting parking lots and shared driveway access. Where commercial development share parking lots and driveways, they can benefit from counting shared spaces toward individual parking requirements.

   E. Requirements for adjacent driveway spacing. Generally, major arterials require greater spacing than minor arterials or collector streets; and those require more spacing than local streets.

   F. Where feasible a new driveway should be located directly opposite an existing driveway in order to create four way stops, roundabout or traffic circles, or other type of controlled intersection that minimizes traffic conflict.

   G. Wherever possible in commercial developments and for all residential lots, access to collector streets or arterials should be provided from a lesser street, so that traffic is directed toward intersections, rather than a series of un-regulated driveways.

   H. Establish minimum driveway separation and corner clearance requirements. No driveway should be located closer to a corner than 20 feet on local streets, 50 feet on collector streets, and 100 feet on arterials. When these requirements cannot be met due to lack of frontage, the driveway may be located such that the radius will begin at the farthest property line.

Similarly, standards for driveway spacing should be instituted and where spacing requirements cannot be met, shared access must be considered.

I. Establish standard widths for curb cuts. Commercial or multi-family driveways should be 36 feet or less for two-way traffic unless the Town determines that an additional turning lane is necessary. Other driveways should be no more than 14 feet.

J. Any business with a drive-through (banks, fast-food, car washes) should demonstrate that sufficient queuing space is available to avoid traffic backing up into the street or interfering with parking lot access.

Access Management regulations and site planning requirements should also be implemented with the goal of addressing pedestrian and bicycle safety and Town landscaping or "gateway development." For example,

- A reduction in the number of driveways per block or per mile reduces the number of conflict points for the pedestrian or cyclist.

- The constraints on the width of driveways reduce the potential exposure of pedestrian or cyclists in crossing the many present large paved areas.

- Driveway medians provide a refuge for pedestrians in crossing driveways with more than two lanes and can provide space for low-level plantings (as long as they do not interfere with the site of vehicles exiting or entering the driveway.

- Requirements for delineation of crosswalks from roadways and driveways (stamped, painted, zebra-striped) visually preserves the pedestrian path for motorists exiting or entering a driveway while also helping to beautify the overall streetscape;

- Installation of raised medians or islands along streets provides a refuge area for pedestrians or cyclists crossing the roadway and can provide space for low-level plantings.

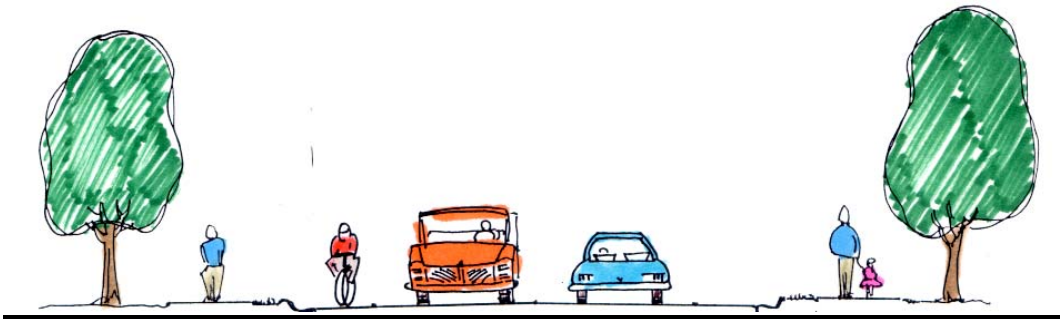
- Access management usually results in better defined conflict points to increase motorist, cyclist and pedestrian awareness and such key intersections are ideal for landscaping, directional signage or historical markers.

4. **New Roads** such as the one proposed to connect NC9 to East State Street in the vicinity of Hemphill Road, or for new subdivisions should meet design standards specified by the Town. Cul-de-sacs should be avoided in favor of inter-connectivity of streets, and recommended cross-sections should be provided.

Recommended Design Standards

Typical Multi-Lane Thoroughfare with Center Median

Typical Two Lane with Center Median / Turn Lane



Typical Two-lane Roadway

VII. Action Summary/Recommendations for Next Steps

Recommended Action	Comments and Key Partners	Timeframe – Immediate
1. Letter to Jay Swain, Division 13, from Mayor to request: • R-o-w and possible NCDOT participation in US70 sidewalk project; • Assistance on Gateway and landscaping development; • Assistance from traffic engineer on traffic signalization and rail crossing study in downtown area; • Traffic Engineering Study for the area around the Primary School and the I-40 Ramp/East State Street/Padgetown Road; • Improved shoulders on State Roads in Town with all resurfacing projects.	Division Offices may have access to Small Urban Funds or other resources for Studies, enhancements, and roadway improvements that can be utilized without going through the MPO process. MPO staff can assist with the drafting of this letter.	March – May, 2004
2. Pursue a **joint easement agreement with the Municipal Sewage District (MSD) for greenways**. This agreement will allow the Town to utilize MSD sewer easements for greenways in principle – individual project request will have to be approved on a case-by-case basis. The Town Greenways Commission has already sought and gotten approval to share the easement for the Flat creek Trail section.	Town Greenway Plan has several sections that follow MSD easements. MPO staff is approaching the MSD Board with this request on behalf of the City of Asheville and can make the request for the Town of Black Mountain.	March – May, 2004
3. Letter to Mountain Mobility and Asheville Transit Services and cc'd to the MPO from Mayor to: • Pledge continue support for Transit and to assist with promotion of services on Town website and newsletters. • Request Bus stop amenities and route information signage. • Commit in principle to developing a "commuter lot" in conjunction with the inter-city route (see Recommended Action # 7).	Town should alert Transit services of local needs for consideration in future capital investment decisions. The Town should also identify and commit to ways to promote transit locally. Letter can be used in MPO application to the State to develop a regional Transportation Demand Management program.	March – May, 2004

Recommended Action	Comments and Key Partners	Timeframe – 6 months – 1 year
4. Develop a local Traffic Calming Policy. The Policy should provide a consistent way for local staff to respond to requests for traffic calming and complaints about traffic speed. Potential policy items: • Development of a complaint/request for traffic calming form with signatures of at least 75% of impacted land-owners or residents. • Increase enforcement and community education as a first step. • Commit to engineered approaches only after enforcement and education efforts are not achieving the desired effects. • Conduct a traffic engineering study to determine the best design and specifications for any measure. • Test proposed measures for impacts to emergency response. • Install temporary measures for a time period to test neighborhood compatibility, before constructing permanent measures.	Town administrative staff, planning board and the Police Department MPO staff can provide some technical assistance in developing this policy, and Asheville staff has experience in administering a traffic calming policy – parts of which could be used as a model. The Town should research funding for studies and improvements or set aside an allocation to address these needs.	March – December, 2004
5. Prioritize local sidewalk needs and develop a systematic plan to replace, resurface, and construct sidewalks per Powell Bill implementation plan for FY 04-05. Recommended priorities: <u>High/Immediate</u> 1. Extend NC9 sidewalk to Cotton Ave (Phase 1) to Montreat (Phase 2) 2. Extend US70 Sidewalk to Goldmont (Phase 1) to Blue Ridge Road (Phase 2) <u>Secondary/Mid-term to Long-term</u> 1. Connection from East State Street sidewalk to School Entrance on Flat Creek Road. 2. Connection from Laurel Circle to North Fork Road on Rhododendron Avenue. 3. Connection from US70 to Fortune St. on North Blue Ridge Rd. and from N. Blue Ridge to Cragmont along Fortune. 4. On-road route or sidewalk on Cotton Ave to Flat Creek Greenway. <u>Incidental to road improvements</u> 1. Blue Ridge Road. 2. US70 from Blue Ridge Road to Grovestone Rd.	Town should commit an allocation of Powell Bill funds toward priority sidewalks. Because of costs involved, staff could consider phasing in priority sidewalks over consecutive fiscal years if needed, or could focus on just one project one year, and the other priority project the next. McGill and associates design for a sidewalk along US70 should include cost estimates which will dictate the best approach. NCDOT may be able to assist with Small Urban Funds t o construct curb and gutter where there is none currently (see Recommended Action # 1). NCDOT can construct sidewalks as incidental to some types of road construction with a local match of 20% from the Town.	March – December, 2004

Recommended Action	Comments and Key Partners	Timeframe – 6 months – 1 year
6. Request to Montreat College to participate in Town transportation planning goals, including: • Sidewalks, a crosswalk and a transit stop at US70 in conjunction with the new campus; • Landscaping features that visually connect with gateway features along US70; • Feasibility Study for a fixed route/shuttle service between Campuses that could be utilized by citizens.	Montreat has developed a preliminary site plan for the Black Mountain Campus. As the planning process moves forward, Town staff should work with Montreat College to pursue mutually beneficial goals. Asheville Transit and/or Mountain Mobility may be able to work with the Town and College to develop a public/private partnership on a fixed route service.	March 2004 – March 2005 (Depending on Montreat College Time Frame)
7. Establish a "Commuter Lot" in an existing parking lot adjacent to the Asheville-Black Mountain Inter-City route that would have available space to allow commuters to park their cars and ride the bus to/from work in Asheville.	The MPO and City of Asheville is applying to the NCDOT Transportation Division to establish a Transportation Demand Management Program. As part of that program, the MPO hopes to secure funds to establish commuter lots in conjunction with Asheville Transit intercity routes.	March 2004 – March 2005
8. Pursue grant support for Flat Creek and Primary School Trail Phases of the Greenway Master Plan. Develop a strategy for grant applications over the coming year, depending on estimated costs. The Primary School Trail is 0.7 miles and the Flat Creek Trail is 0.9 miles, totaling 1.6 miles of trail that could cost upwards of $600,000. These two sections of trail are already on the Priority Needs List for funding through NCDOT, and, because of the transportation function of this corridor, these two trails could make good candidates for the **NCDOT Enhancement Program**. Occasionally, funds will be available through the Division level that can assist with greenways as well. However, resources other than those connected with NCDOT should be pursued and because of the project's vicinity to the stream and the school, there may be other opportunities through environmental and educational sources. If trails are constructed using NCDOT Enhancement Funds then the trails must meet State standards.	Funding strategies (beside NCDOT) to consider: • Trail portions that cross or share r-o-w with State or local roads can be constructed with Powell Bill Funds. Powell Bill expenditures can count as match toward other grant sources. • The Pigeon River Fund improves water quality through public education, steam access and protection through landscaping and buffer establishment which can be incorporated into trail design. The WNC Community Foundation has also supported greenway projects in the past Amounts and match requirements vary (contact Bob Wagner, 254-4960) for information on both: http://www.cfwnc.org/index.html) • The Recreational Trails Program (RTP) will fund up to 50% of the cost of a trail project, up to $50,000. (contact Dwayne Stutzman 251-6784). • The Parks and Recreation Trust Fund (PARTF) funds up to 50% of a project up to $250,000. (contact LuAnn Bryan, 251-6784).	March 2004 – March 2005 Enhancement Grant Applications due June 2004.

Recommended Action	Comments and Key Partners	Timeframe – 6 months – 1 year
9. Incorporate transportation goals into the zoning Re-write Process. (See Chapter VI. for specific opportunities). This can be done by including experience in transportation policy, sidewalk regulations, and access management experience as a criteria for firm selection in the request for proposals to re-write the Town's Zoning Ordinance. As the zoning Re-write process moves forward, opportunities to address Black Mountain transportation and other community goals through zoning requirements on new development or redevelopment projects should be pursued.	Town staff and Planning Board.	Whenever RFP is developed and as part of the Zoning Re-write process.
10. Continue to press for critical projects as identified in the TIP and Priority Needs List through participation in the FBRMPO and the Long Range Planning Process. The FBRMPO will being development of its Regional Long Range Transportation Plan in the coming year (a rough draft is due in December of 2004). Recommendations from this Local Transportation Plan should be incorporated into that planning document. Additional opportunities for public feedback and education on both local and regional transportation issues will be presented as part of that process as well.	Town representatives on the TAC and TCC, FBRMPO staff, Town Planning Board and Board of Aldermen.	Continuous.
11. Request the MPO to include the Blue Ridge Road Interchange Project as part of the traffic modeling analysis in the MPO's Long Range Transportation Plan. Local traffic counts and the regional model can compare interchange location scenarios at Lytle Cove and Blue Ridge Roads relative to 2030 traffic projections, truck traffic, and the overall regional model to determine interchange impacts.	Town representatives on TAC and TCC, FBRMPO staff.	July 2004 – July 2005.

The Action Plan to implement the Local Transportation Plan should be revisited every one to two years by the Town of Black Mountain in order to ensure that the Plan remains timely and useful for Town leaders and the public.

VIII. Maps

1. Existing Land Use
2. Natural Resources
3. Roadways
4. Safety and Access Management
5. Rail and Transit
6. Sidewalks
7. Greenways
8. Buncombe County Bicycle Transportation Map (available separately through the French Broad River Metropolitan Planning Organization)

IX. Appendices

1. Summary of the Community Meeting and Survey on the Town of Black Mountain Transportation Plan, September 16, 2002, 5-7 pm at the Lakeview Center at Lake Tomahawk.

2. Summary of Meeting with the Community Economic Development Committee, October 22, 2003, from 8:30 – 10:00 am at Black Mountain Town Safety Building.

3. Summary of the Public Workshop with the Black Mountain Town Planning Board on, January 22, 2004, at Black Mountain Town Safety Building.

4. EPA Transportation and Brownfields Fact Sheet.

5. Department of Transportation Pedestrian Policy Guidelines, October 1, 2000.

6. Memorandum from the NCDOT Asheville MPO Coordinator, May 17, 2000 on the NCDOT evaluation of the NC9 and US70 Intersection for a Roundabout.

7. NCDOT Feasibility Study for the I-40 Blue Ridge Road Interchange.

Note: The Priority Needs List, MTIP, and Congestion Management System Report for the French Broad River Metropolitan Planning Organization may be accessed at: http://www.frenchbroadrivermpo.org/.